

SPINNING AND EVALUATION TESTS ON SOME NEW
VARIETIES OF COTTON

A THESIS

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of the requirements for the Degree of
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by

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SPINNING AND EVALUATION TESTS ON **SOME** NEW
VARIETIES OF COTTON

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FOREWORD

The conducting of a spinning test and the analysis of the results obtained from such a test is not a cut and dried affair as, unfortunately, many people believe.

The results obtained from carefully conducted spinning tests are of a very complex nature. Some of the results require the use of higher mathematics and physics to explain and some cannot be adequately explained by any means available at the present time.

A very good analogy of the difficulties encountered¹ has been drawn by Malcolm E. Campbell. Mr. Campbell says:

"A consideration of a somewhat similar investigation into the quality of a substance other than cotton may throw light on the type of problem which confronts one in a spinning test. For example, standard routine laboratory tests have been established for determining the value of coal as a fuel. The investigator prepares his sample, and by a sequence of routine tests determines the percentage of moisture, volatile combustible matter, and ash. The application of a formula gives the number of B.T.U.'s per pound of coal. The higher the number, the greater the efficiency of the coal as a fuel is considered to be. Unfortunately, for the cotton fiber, "B.T.U.'s" are not available for determining the value.

"If, however, the investigator is not satisfied with his laboratory test of the coal sample, and decides to conduct a power plant test, then the procedure is more like the spinning test. The boiler must be thoroughly cleaned, the coal weighed, and a fire made. The coal is then shoveled

1

Campbell, Malcolm E. "Possibilities and Limitations of Spinning Test", Textile Research, No. 8, Vol. VIII, 1937-1938, pp 263-269.

into the furnace, in the usual way, steam pressure is developed in the boiler, and a fly wheel begins to turn in the engine room. With a series of record cards and formulas, the investigator then is able to calculate the horsepower developed. The total power developed is determined, and the ashes are weighed. To what extent can the investigator consider that he has a true and complete measurement of the quality of the sample of coal?

"The illustration given is not exactly parallel to a spinning test since actual samples of the original cotton are transformed into yarn, cord, or cloth and the result is tested, whereas the coal, as such, got no farther than the fire-box of the boiler, the study being made primarily upon the steam pressure that it generated. Nevertheless, the main point in the problem has been brought to the surface. How much does the figure for weight of ashes depend on the type of grate, the method of firing, and the kind and degree of draft? How much does the figure for work done depend on these same factors, and innumerable others--friction in steam pipes, speed of engine, atmospheric pressure, setting and timing of intake and exhaust valves? In short, to what extent has it been a test of the efficiency of the boiler and engines and their operation and to what extent a test of the particular sample of coal? It is not difficult to see that if conditions in this coal test had differed, the results would have differed.

"A parallel question thus suggests itself with respect to the spinning test as a means of determining cotton quality. To what extent are the results a measure of manufacturing conditions and machines, and to what extent are they an index of the quality of the cotton tested?"

The conducting of a spinning test on regular cotton mill equipment when only a small amount of material is available is, at best, a difficult job. The regular machinery is designed for constant flow of cotton and requires as much as 200 or 300 pounds of material just to thread the machine. Therefore, it is easy to see that the job of running a lot of 30 pounds through a picker, for example, that requires about 200 pounds to completely thread, is difficult, if not almost impossible. The uniformity of the result is usually

very variable.

The results obtained in these tests and tabulated on the following pages are not as uniform as would be desired, but seem to be very good considering the small lots of material available.

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SECTION I

SPINNING AND EVALUATION TESTS ON SOME NEW VARIETIES OF COTTON

INTRODUCTION

For many years the quality of cotton grown in Georgia and the South has deteriorated until much of the crop is so poor that very little use is made of it in this country. As a consequence, a large percentage is either exported to other countries, or sold in this country at a very low price for use in low grade materials or as waste.

The Agricultural Experiment Station of the University of Georgia has been experimenting for several years on some pure-bred strains of better grade cottons with the view to developing a cotton that would grow as well in Georgia as the lower grade strains do. One problem has been that of cross-breeding dry land strains with wet land delta strains that would grow in the medium climate met with in most of the state and still produce the longer staple length obtained in the more moist delta lands. Another problem has been the development of a cotton that would produce a high enough yield to make the change from the lower grade to higher grade profitable for the farmer since the lower grades usually produce much more lint per acre than do the higher grades.

The cottons tested in this study included several

strains which the station has developed over a period of years that seem to meet the qualifications demanded by the farmer as regards growth and yield.

The object of this study is to test these cottons under cotton mill conditions to ascertain if the quality is sufficiently good to cause the mill to pay the higher price which would be demanded by the farmer for this new, higher grade product.

APPARATUS AND MATERIALS USED

The materials used in this study included seven lots of newly developed, pure-bred strains of cotton grown in Georgia by the Agricultural Experiment Station of the University of Georgia; one lot of newly developed, irrigated, West Texas cotton developed and grown by the West Texas Cotton Oil Company of Plainview, Texas; and, one lot of ordinary American Upland cotton grown in Georgia. These lots were of medium staple length and weighed 30 pounds each.

The regular cotton mill processing equipment located in the A. French Textile School of the Georgia School of Technology was used for this work. The pieces of equipment used include the following: One Saco-Lowell Company Automatic Feeder, one Saco-Lowell Company Vertical Opener, one Saco-Lowell Company Picker, converted to single process with improved Kitson Evener motion and Blending Reserve Unit, one Saco-Lowell Company revolving top-flat Card, one Saco-Lowell Company four-line Drawing Frame, one Whittin Company long-draft Slubber, one Woonsocket Fine Frame, one Saco-Lowell long-draft Ring Spinning Frame, one Parks and Cramer Company Humidifier Unit including air compressor pump, water circulating pump, filtering plant, and ten humidifier heads.

The facilities of the standard conditioned Physical Testing Laboratory of the A. French Textile School were used in making the various tests on the spun yarn samples. The

equipment used include: One Brown & Sharpe Company Roving Reel, one Brown & Sharpe Company Yarn Reel, one Brown & Sharpe Company Yarn Balance (with grain weights), one Christian-Becker Company Chainomatic Analytical Balance (with gram weights), one Alfred Suter Twist Counter, one Alfred Suter Vertical Single Strand Yarn Tester (oil ~~hanger~~ type), one Emerson Conditioning Oven (electrical, with balance and air circulator motor), one Henry L. Scott Company Vertical Yarn Skein Tester, and, one Auditorium Conditioning Company complete Conditioning Unit with Westinghouse Company controls and Foxboro Company temperature and humidity Recorder.

DISCUSSION

THE COTTONS USED

The nine sample lots of cotton used in ~~this~~ study include one lot of irrigated West Texas Paymaster cotton developed and grown by the West Texas Cotton Oil Company, one lot of ordinary American Upland cotton grown by an ~~unknown~~ farmer in Georgia, and seven lots of pure-bred, improved strains of new varieties grown by the Agricultural Experiment Station of the University of Georgia.

The Paymaster cotton is a new dry land cotton developed in West Texas at Plainview. It was included in this study because of the writer's interest in that section of the country.

The American Upland cotton was bought at random on the open market as middling, one inch. It is intended to serve as a standard in these tests to indicate the difference between the cotton normally grown by southern farmers and these newly developed strains. This particular grade of cotton was chosen because it was very nearly the same type of cotton as those under test. The majority of the cotton grown in the south doesn't quite measure up to this standard, being a little lower in grade and a little shorter in staple length than this sample chosen as a standard.

The seven new varieties grown by the University of Georgia are improved strains of longer stapled cottons not

ordinarily planted by the farmers of Georgia or the South because of their slightly higher price and the fact that they require more rigid control during growth.

Because this work was designed to study the seven varieties developed by the University of Georgia, information contained in the following few tables was obtainable. The Paymaster and Georgia Upland cottons were obtained in bale form after ginning so that it was impossible to obtain 100 seeds of these two cottons with the fibers still attached.

Material for the following tables,² covering fiber analysis of the seven varieties, was obtained from a composite sample of 100 seeds of each variety, each taken from the center of a different lock of cotton.

The Standard Deviation, Standard Error of the Mean, and Percent Coefficient of Variation were calculated for each of the several items using the following formulas:

$$\sigma = \sqrt{\frac{\sum X^2}{N} - M_x^2}$$

Where: σ is the Standard Deviation
 \sum means summation
 X is the measured quantity
 N is the number of measurements
 M_x is the mean of the measurements

2

All tests on the cotton fibers were made by Professor C. C. Murray, Associate Professor of Agronomy, College of Agriculture, University of Georgia.

$$S.E. = \frac{\sigma}{\sqrt{N}}$$

Where: S.E. is the Standard error of the mean
 σ is the standard deviation
 N is the number of measurements

$$\% C.V. = \frac{\sigma}{M_x} \times 100$$

Where: C.V. is the Coefficient of variation
 σ is the standard deviation
 M_x is the mean

The lint was removed from each of the 100 seeds by means of a fiber sorter and separated into graduations of 1/16 of an inch. Each interval of 1/16 inch was weighed in milligrams and summed, giving the total fiber weight for each seed. The defibered seeds were also weighed in milligrams, which enabled the calculation of the percentage of lint. The mean percentage of lint for each of the seven varieties is shown in Table I.

It may be noted that the mean percentage of lint for the various varieties is considerably lower than is normally found on mechanically ginned cottons. The reason for this is the fact that the modern cotton gin removes a larger proportion of short fibers than is the case with the fiber sorter.

The mean length over one-half inch was determined for each variety, as shown in Table II, by use of Dr. A. O. Pope's

Table I: Mean Percentage of Lint

| Variety | Mean Percent- age of lint | Standard deviation of mean | Standard error of mean | Percent coefficient of variation |
|-------------------------------------|------------------------------|----------------------------------|---------------------------|--|
| Stoneville 2B | 29.82 | 4.0176 | 0.4018 | 13.4728 |
| D & P L - 11A | 31.75 | 5.4486 | 0.5449 | 17.0619 |
| Dixie Triumph 8 | 29.50 | 3.3511 | 0.3351 | 11.3597 |
| Deltapine 12B | 34.60 | 4.5033 | 0.4503 | 15.2654 |
| Wanamaker-W. R. Cleveland Sta. 4 | 31.22 | 3.3439 | 0.3344 | 10.7108 |
| Coker's 4 in 1 | 30.26 | 3.2943 | 0.3294 | 10.8866 |
| Coker's Cleve- wilt #7 | 30.85 | 4.6398 | 0.4640 | 15.0399 |

Table II: Mean Length Over 1/2 Inch (in 1/16 Inch)

| Variety | Mean Length Over 1/2 Inch (In 1/16 Inch) | Standard Deviation of Mean | Standard Error of Mean | Percent Coefficient Of Variation |
|--------------------------------------|--|----------------------------------|---------------------------|--|
| Stoneville 2B | 13.42 | 0.9292 | 0.0929 | 6.9240 |
| D & P L - 11A | 13.06 | 0.9378 | 0.0938 | 7.1807 |
| Dixie Triumph 8 | 12.33 | 1.0719 | 0.1072 | 8.6934 |
| Deltapine 12B | 12.80 | 0.6928 | 0.0693 | 5.4125 |
| Wanamaker- W. R. Cleveland Sta. 4 | 12.86 | 0.9167 | 0.0917 | 7.1283 |
| Coker's 4 in 1 | 13.15 | 1.0198 | 0.1020 | 7.7551 |
| Coker's Cleve- wilt #7 | 13.24 | 0.6945 | 0.0195 | 5.2455 |

³
method. As the title indicates, this table gives the mean length of all fibers over one-half inch in sixteenth of an inch.

Table III shows the percentage of lint in the Modal 3/16 inch. This was arrived at by determining the Modal length of the fibers on the 100 seeds and calculating from the weights of each length the percentage of lint in the modal 3/16 inch. For example, if the modal length of a given variety was 15/16 inch, then the Modal 3/16 inch of that variety would include all fibers 14/16, 15/16, and 16/16 inch in length.

Table IV shows the mean percentage of lint which is one-half inch long or less for each of the seven varieties. This was determined by taking the percent of fiber one-half inch or less on the 100 seeds of each variety and averaging these percentages.

Table V shows the Mean Modal length for the seven varieties. This was determined by recording the Modal lengths on each of the 100 seeds of each variety and determining the Mean of the Modal lengths.

The Mean percentage of length in the Mean Modal length is shown in Table VI. This is the percentage of lint for each fiber that occurs in the Mean Modal length (Table V).

³
Pope, Dr. A. O. "A Method for Determining the Mean Length Over One-Half Inch", Journal of American Society of Agronomy, Vol. 25, pp 740-756, 1933.

Table III: Mean Percentage of Lint in Modal 3/16 Inch

| Variety | Mean Percent- age of Lint in Modal 3/16" | Standard Deviation of Mean | Standard Error of Mean | Percent Coefficient of Variation |
|--------------------------------------|--|----------------------------------|---------------------------|--|
| Stoneville 2B | 49.90 | 6.9814 | 0.6981 | 13.9908 |
| D & P L - 11A | 49.15 | 7.4852 | 0.7485 | 15.2292 |
| Dixie Triumph 8 | 44.70 | 6.9383 | 0.6938 | 15.5219 |
| Deltapine 12B | 47.60 | 7.4492 | 0.7449 | 15.6496 |
| Wanamaker- W. R. Cleveland Sta. 4 | 41.75 | 5.8896 | 0.5890 | 14.1068 |
| Coker's 4 in 1 | 49.35 | 7.4572 | 0.7457 | 15.1108 |
| Coker's Cleve- wilt #7 | 42.65 | 7.0305 | 0.7031 | 16.1065 |

Table IV: Mean Percentage of Lint 1/2 Inch and Less

| Variety | Mean Percent- age of Lint $\frac{1}{2}$ Inch and Less | Standard Deviation of Mean | Standard Error of Mean | Percent Coefficient of Variation |
|--------------------------------------|---|----------------------------------|---------------------------|--|
| Stoneville 2B | 9.56 | 2.6394 | 0.2639 | 27.6088 |
| D & P L - 11A | 8.78 | 3.6758 | 0.3676 | 41.8556 |
| Dixie Triumph 8 | 8.10 | 2.4228 | 0.2423 | 29.9111 |
| Deltapine 12B | 9.56 | 3.0077 | 0.3078 | 31.4613 |
| Wanamaker- W. R. Cleveland Sta. 4 | 9.34 | 3.8058 | 0.3806 | 40.7473 |
| Coker's 4 in 1 | 8.38 | 2.8093 | 0.2809 | 33.5239 |
| Coker's Cleve- wilt #7 | 11.98 | 3.8105 | 0.3811 | 31.8072 |

Table V: Mean Modal Length

| Variety | Mean Modal Length (1/16 Inch) | Standard Deviation of Mean | Standard Error of Mean | Percent Coefficient of Variation |
|--------------------------------------|----------------------------------|-------------------------------|---------------------------|-------------------------------------|
| Stoneville 2B | 15.64 | 0.9346 | 0.0965 | 6.1675 |
| D & P L - 11A | 14.86 | 1.1425 | 0.1143 | 7.7069 |
| Dixie Triumph 8 | 15.59 | 0.7224 | 0.0722 | 4.6337 |
| Deltapine 12B | 15.06 | 0.9468 | 0.0947 | 6.2869 |
| Wanamaker- W. R. Cleveland Sta. 4 | 14.78 | 1.0543 | 0.1054 | 7.1333 |
| Coker's 4 in 1 | 15.26 | 0.9447 | 0.0945 | 6.1907 |
| Coker's Cleve- wilt #7 | 15.73 | 0.7329 | 0.0733 | 4.6592 |

Table VI: Mean Percentage of Lint in Mean Modal Length

| Variety | Mean Percent- age of Lint | Standard Deviation of Mean | Standard Error of Mean | Percent Coefficient of Variation |
|--------------------------------------|------------------------------|-------------------------------|---------------------------|-------------------------------------|
| Stoneville 2B | 22.62 | 4.1153 | 0.4115 | 18.1932 |
| D & P L - 11A | 21.48 | 4.2012 | 0.4201 | 19.5587 |
| Dixie Triumph 8 | 20.36 | 5.5086 | 0.3509 | 17.2328 |
| Deltapine 12B | 21.62 | 3.3668 | 0.3367 | 15.5726 |
| Wanamaker- W. R. Cleveland Sta. 4 | 18.30 | 3.0248 | 0.3025 | 16.5295 |
| Coker's 4 in 1 | 22.04 | 4.9798 | 0.4980 | 22.5044 |
| Coker's Cleve- wilt #7 | 19.57 | 3.9534 | 0.3953 | 20.2013 |

EXPERIMENTAL

Upon receipt of the cottons, each lot was opened and exposed to an atmosphere of 60 degrees relative humidity for several hours in order to condition the cottons for processing.

Each lot was then run through the Vertical Opener. This machine removes the bulk of the dirt and leaves held by the cotton. From the opener, the cotton was delivered by condenser and trunk line to a bin in the picker room where it was allowed to remain for some time in the loose, opened state to condition it for the next process.

The lots were then processed through the converted single process Picker. The purpose of this machine is to remove the fine dust and leaf particles and any large foreign particles left by the opener and to put the cotton in lap form for the next process. In order to more accurately handle these small lots of cottons at the Picker, the machine was equipped with two Kirchner (or carding) beaters instead of the conventional blade beaters; a blending reserve to hold the cotton between the breaker section of the picker and the finisher section; and, a Kitson type Evener motion.

Each lap of cotton was carefully weighed and tested to make sure that a 12 ounces per yard lap was obtained. The uniformity at this point was very poor because of the size of the picking machine (about 200 pounds of cotton are required to adequately thread a single process picker).

The laps were then placed back of the Carding Machine and a 50 grains per yard sliver was produced. The card is designed to remove fine dust, short fibers, neps (broken and matted fibers), noils (immature fibers), and notes (seed coat fragments). It also begins to parallelize the fibers and delivers the cotton in rope form (about one-half inch in diameter, called sliver) into a coiler can for convenient handling at the next process.

The slivers were then fed into a First Drawing Frame for further evening and parallelizing. To improve the evenness of the product at this point, six slivers were drawn into one sliver making a draft of six.

Following the universal practice, the slivers were then redrawn through the drawing frame for maximum parallelization and evenness. The set-up and method for the second drawing was exactly the same as that for the first drawing.

The slivers from the second Drawing were then fed into the Whitin Long Draft Slubber to be drawn into roving. This machine draws the product out several times (about ten times in these tests) and inserts the first twist imparted to the product. Because of the fineness of the product and the fact that it is placed on a bobbin, twist is necessary at this point

4

In the cotton system for numbering yarns, the Count of a yarn is the number of 840 yard length per pound. The count is designated as this number followed by a small capital "s". Hank Roving (HR) is a term used to designate the product of the roving frame. It is the same numerically as count but is a loosely twisted product, whereas count is used to designate a finished, hard twisted yarn.

to give sufficient strength to the product to enable it to withstand the strain of unreeing at the next process.

The 1.60 HR from the long draft slubber was doubled and fed into a fine frame (commonly called a *Spinner*). This machine is exactly the same in principle as the *Slubber*, but is constructed to handle finer strands of material. The 4.00 HR was delivered from the fine frame using a draft of 4.00.

As mentioned previously, the spinning of uniform yarns on regular Textile Processing Equipment is difficult even with large lots of cotton because of the great number of variable factors involved. Because of the magnification of these same factors, it is almost impossible to secure uniform yarns from small lots of material such as were at hand for these tests. It is believed, however, that sufficiently uniform yarns were spun in these tests to allow some definite conclusions to be drawn as to the relative value of the improved varieties of cotton under test.

The staple of the cotton was of medium length (one to one and one-eighth inch). In industry such a staple length would always be spun into what is called a medium count which covers the range of 20s to 40s. For this reason, three numbers (22s, 32s, and 36s), covering roughly the entire range for such a staple length, were chosen for these tests.

The yarns were spun on a regular Saco-Lowell apron type long-draft spinning frame. Two ends of the 4.00 HR from the fine frame were fed together into the spinning frame,

giving the equivalent of a 2.00 HR fed into the machine. A⁵ twist multiplier of 4.75 was used.

This feed gave a draft of eleven for the 22s yarn; sixteen for the 32s yarn; and, eighteen for the 36s yarn. This range of draft adheres closely to common mill practice, being neither too low nor too high.

Draft on the various machines is of paramount importance if good yarns are to be spun. Too low a draft will cause poor evening of the yarn so that thick and thin places will occur. Too high a draft will cause what is commonly called "Over-Drafting" which weakens the yarn considerably due to breakage of fibers and removal of some of the natural convolutions of the fibers which gives the cotton yarn its strength.

The following table shows a summary of the organization of the yarns and the machinery set-ups used in these tests. These set-ups follow the general pattern of mill procedure, and were used on all the lots of cotton processed.

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To a certain point, the more the twist, the stronger the yarn. Experience has shown the multiplier 4.75 to give a yarn of sufficient strength for use in warps. The twist inserted in a yarn is calculated to be the product of the multiplier times the square root of the count to be made.

Table VII: Machinery Set-Up and Organization

PICKER

Type Beaters: Carding
 No. of Beaters: 2
 Draft: 3.85
 Lap Weight: 12 oz/yd.

CARD

Cylinder Speed: 165 rpm.
 Doffer Speed: 10 rpm.
 Licker-in Speed: 440 rpm.
 Lap Weight Fed: 12 oz/yd.
 Sliver Delivered: 50 gr/yd.
 Draft: 105
 Draft Gear: 16 teeth
 Production Gear: 20 teeth

FIRST DRAWING

Type Rolls: Metallic
 No. of Rolls: 4 pairs
 Settings:
 1st to 2nd: 1-1/4 inch
 2nd to 3rd: 1-5/8 inch
 3rd to 4th: 1-3/4 inch
 Sliver Weight Fed: 50 gr/yd.
 Sliver Delivered: 50 gr/yd.
 Draft: 6
 Draft Gear: 36 teeth
 Tension Gear: 54 teeth

SECOND DRAWING

Type Rolls: Metallic
 No. Rolls: 4 pairs
 Settings:
 1st to 2nd: 1-1/4 inch
 2nd to 3rd: 1-5/8 inch
 3rd to 4th: 1-3/4 inch
 Sliver Weight Fed: 50 gr/yd.
 Sliver Delivered: 50 gr/yd.
 Draft: 6
 Draft Gear: 36 teeth
 Tension Gear: 54 teeth

ROVING-SLUBBER

Type: Apron-type Long Draft
 Weight Sliver Fed: 50 gr/yd.
 Ends Fed In: 2
 HR Delivered: 1.60 HR
 Draft: 9.55
 Draft Gear: 27 teeth
 Twist Multiplier: 1.00
 Twist per Inch: 1.265
 Twist Gear: 23 teeth
 Tension Gear: 26 teeth
 Lay Gear: 23 teeth

ROVING-FINE FRAME

Type: Regular Short Draft
 Settings:
 1st to 2nd: 1-3/8 inch
 2nd to 3rd: 1-5/8 inch
 HR Fed: 1.60 HR
 Ends Fed: 2
 HR Delivered: 4.00 HR
 Draft: 4.85
 Draft Gear: 33 teeth
 Twist Multiplier: 1.20
 Twist per Inch: 2.40
 Twist Gear: 30 teeth
 Tension Gear: 32 teeth
 Lay Gear: 26 teeth

SPINNING

Type: Apron-type Long Draft
 HR fed: 4.00 HR
 Ends Fed: 2
 Counts Delivered: 22s
 Draft: 11
 Draft Gear: 49 teeth
 Twist Multiplier: 4.75
 Twist per Inch: 21.2
 Twist Gear: 30 teeth
 Cylinder Gear: 31 teeth
 Jack Gear: 149 teeth

TESTS ON YARNS

There is an almost endless number of tests that could be made on a sample of cotton yarn, but only three of these; namely, the count, the skein breaking strength, and the single strand breaking strength, are of any great importance. For that reason, the above three mentioned tests were the only ones run on the yarn spun for this study. The yarns were taken from the spinning frame and placed in the physical testing laboratory. This laboratory was maintained at standard testing conditions as outlined by the American Society for Testing Materials.⁶

Fifty standard 120 yard skeins were reeled and suspended in the standard atmosphere for conditioning (standard regain for cotton yarns is 7% moisture based on the dry weight. Four hours in the atmosphere of the standard condition of the testing laboratory is sufficient time to allow the yarn to pick up this amount of moisture).

After conditioning, the skeins were broken individually using a Henry L. Scott Company combination Vertical Breaking Strength Tester. This machine has rollers, 27 inches apart in a vertical plane, over which the skin is draped. In

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A. S. T. M. designation: D180-41 "Standard General Methods of Testing and Tolerances for Cotton Yarns". Standard Atmosphere is that atmosphere having a relative humidity of 65% at 70°F. A tolerance of plus or minus 2% in relative humidity and plus or minus 2°F in temperature allowed.

operation, the lower roller is moved downward positively by means of gears and a motor. The tension on the skein pulls the upper roller downward, which, through a series of gears moves a pendulum arm. The pendulum arm carries weights, and the tension required to move these weights is recorded on a dial in pounds.

After breaking, the skeins were weighed **individually** in grains. From the weight, the count of the yarn was calculated using the formula:

$$\text{Count} = \frac{\text{Length in Yards} \times 7000}{\text{Weight in grains} \times 840}$$

Fifty single strand breaking strength determinations were made using an Alfred E. Suter Company Single Strand Breaking Machine. This machine, of the oil plunger type, consists of two rollers 18 inches apart in a vertical plane and a pendulum and dial arrangement similar to the Scott machine mentioned above. In operation, a single strand of the yarn is clamped underneath the two rollers, a catch released, and the bottom roller, because of its weight, moves downward. The oil plunger regulates the rate of movement. The upper roller is pulled downward by the pull on the yarn, thus moving the pendulum across the dial. The 50 determinations on each yarn were recorded and averaged.

RESULTS

The count of a yarn is defined as the number of 840 yard lengths of the yarn required to weigh one pound. From this definition it can be seen that there is an inverse relationship between the count of a yarn and its size (diameter). Everything else being equal (such as twist, staple length, etc.), the strength of a yarn is approximately directly proportional to the size of a yarn or inversely proportional to the count. In other words, as the count increases, the size of the yarn and the strength decreases.

Table VIII shows the average results of the three tests made on the various yarns (as explained in the previous chapter). The individual results of the 50 determinations may be found on pages 29 to 32 of Section II of this report.

Since the above mentioned relationship between the count, size, and breaking strength is true, the product of the count times the skein breaking strength can be used for approximate comparisons of yarns of only slightly different counts. Table IX shows the count-strength products (obtained by multiplying the average count by the average skein breaking strength in pounds) for each of the three yarns of each of the nine varieties under test. The count-strength products for each of the individual determinations may be found on pages 29 through 55 of Section II of this report.

Unfortunately, however, the count-strength product is

Table VIII: Average Count, Skein Breaking Strength, and Single Strand Breaking Strength for Each Yarn of Each of the Nine Varieties.

| Lot No. | Variety Name | Average Count | Average Skein Breaking Strength (lbs.) | Average Single Strand Breaking Strength (gms.) |
|---------|--------------------------------------|---------------|--|--|
| 1 | Stoneville 2B | 21.84 | 95.90 | 382.90 |
| | | 31.80 | 58.06 | 235.30 |
| | | 35.46 | 43.76 | 194.10 |
| 2 | D & P L - 11A | 22.39 | 85.00 | 317.50 |
| | | 32.91 | 48.80 | 206.50 |
| | | 35.90 | 38.68 | 177.40 |
| 3 | Dixie Triumph 8 | 23.02 | 84.60 | 312.40 |
| | | 33.88 | 49.37 | 206.10 |
| | | 38.33 | 38.62 | 177.50 |
| 4 | Deltapine 12B | 21.95 | 88.30 | 326.00 |
| | | 34.16 | 49.10 | 222.30 |
| | | 36.41 | 41.39 | 186.40 |
| 5 | Wanamaker- W. R. Cleveland Sta. 4 | 21.87 | 94.90 | 366.80 |
| | | 34.01 | 50.63 | 207.20 |
| | | 37.42 | 43.24 | 189.00 |
| 6 | Coker's 4 in 1 | 21.59 | 94.66 | 371.90 |
| | | 31.81 | 55.16 | 241.50 |
| | | 34.41 | 45.09 | 212.10 |
| 7 | Coker's Cleve- wilt #7 | 22.19 | 87.83 | 343.00 |
| | | 32.81 | 51.02 | 199.10 |
| | | 37.47 | 41.73 | 171.20 |
| 8 | West Texas Paymaster | 20.93 | 93.53 | 362.60 |
| | | 30.24 | 56.32 | 217.00 |
| | | 34.38 | 44.49 | 198.00 |
| 9 | Georgia Upland 1" - Mid. | 21.78 | 95.99 | 351.50 |
| | | 30.68 | 55.07 | 230.30 |
| | | 35.98 | 44.48 | 187.80 |

Table IX: Average Count-Strength Products for Each Yarn of Each of the Nine Varieties.

| Lot No. | Variety Name | Count-Strength Products---22s | Count-Strength Products--32s | Count-Strength Products--36s |
|---------|---------------------------------|-------------------------------|------------------------------|------------------------------|
| 1 | Stoneville 2B | 2096.20 | 1846.31 | 1551.73 |
| 2 | D & P L - 11A | 1860.38 | 1600.00 | 1388.61 |
| 3 | Dixie Triumph 8 | 1949.33 | 1672.66 | 1480.30 |
| 4 | Deltapine 12B | 1934.65 | 1677.25 | 1507.01 |
| 5 | Wanamaker-W. R. Cleveland Sta.4 | 2076.99 | 1721.93 | 1618.04 |
| 6 | Coker's 4 in 1 | 2043.71 | 1754.64 | 1551.55 |
| 7 | Coker's Cleve-wilt #7 | 1948.95 | 1673.97 | 1563.62 |
| 8 | West Texas Paymaster | 1957.58 | 1703.12 | 1529.57 |
| 9 | Georgia Upland 1" - Mid. | 2090.66 | 1689.55 | 1600.39 |
| Average | | 1995.38 | 1704.38 | 1532.20 |

not a constant figure for a wide range of counts and, for this reason, cannot be used with any great deal of accuracy to evaluate yarns of widely different counts.

To better evaluate yarns of widely different counts, a new index of yarn strength has been developed by the United States Department of Agriculture.⁷ This index is called the "Weighted Average" strength and can be used effectively in any spinning and evaluation test where more than one count of yarn is spun. This value is determined by fitting a straight line, using the method of least squares, to the count-strength products of the various yarn counts, calculating the point at which this line intersects the ordinate for the count chosen, and dividing this value by the count chosen to obtain the index in pounds per skein. The count chosen is an arbitrary one and in this case was 20s.

Table X shows the Weighted Average strength of 20s yarn (in lbs.) for each of the nine varieties under test. The individual calculation of each of these weighted averages may be found on pages 83 through 91 of Section II of this report.

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Campbell, Malcolm E. and Lee, R. L., "Spinning and Fiber Properties of Six American Upland Cottons Grown in Stoneville, Mississippi, Crop of 1939", United States Department of Agriculture, Agricultural Marketing Service, May 1940.

Table X: Weighted Average Breaking Strength of 20s
Yarn (in Pounds) for Each of the Nine Varieties.

| Lot No. | Variety | Weighted Average Breaking Strength - 20s Yarn (lbs.) |
|------------|---------------------------------------|---|
| 1 | Stoneville 2B | 109.430 |
| 2 | D & P L - 11A | 96.026 |
| 3 | Dixie Triumph 8 | 104.200 |
| 4 | Deltapine 12E | 99.690 |
| 5 | Wanamaker - W. R. Cleveland Sta. 4 | 106.270 |
| 6 | Coker's 4 in 1 | 105.630 |
| 7 | Coker's Cleve- wilt #7 | 100.140 |
| 8 | West Texas Paymaster | 99.740 |
| 9 | Georgia Upland 1" Mid. | 106.610 |
| Average | | 103.082 |

ANALYSIS OF RESULTS

From the results obtained in these tests and given in detail on the preceeding pages, the following analyses may be made:

1. The highest percentage of lint was obtained from Deltapine 12B (34.60%), with D & P L - 11A (31.75%), Wanamaker-W. R. Cleveland Sta. 4 (31.22%), and Coker's 4 in 1 (30.26%) following in order as shown in Table I.

2. The variety having the greatest percentage of lint in the Modal 3/16 inch was Stoneville 2B (49.90%), with Coker's 4 in 1 (49.35%), D & P L - 11A (49.15%), and Deltapine 12B (47.60%) following in order as shown in Table III.

3. The variety having the least percentage of lint 1/2 inch and less in length was Dixie Triumph 8 (8.10%), with Coker's 4 in 1 (8.38%), D & P L - 11A (8.78%), and Wanamaker-W. R. Cleveland Sta. 4 (9.34%) following in order as shown in Table IV.

4. The variety having the longest Mean Modal length was Coker's Clevevilt #7 (15.73/16 inch), followed in order by Stoneville 2B (15.64/16 inch), Dixie Triumph 8 (15.59/16 inch), and Coker's 4 in 1 (15.26/16 inch), as shown in Table V.

5. The variety having the highest percentage of lint in the Mean Modal length was Stoneville 2B (22.62%), followed in order by Coker's 4 in 1 (22.04%), Deltapine 12B (21.62%), and D & P L - 11A (21.48%), as shown in Table VI.

6. The variety having the highest Weighted-Average Breaking Strength for 20s yarn was Stoneville 2B (109.430), followed in order by Georgia Upland (106.610), Wanamaker-W. R. Cleveland Sta. 4 (106.270), and Coker's 4 in 1 (105.630), as shown in Table X.

7. The variety having the highest Count-Strength Product for 22s yarn was Stoneville 2B (2096.20), with Georgia Upland (2090.66), Wanamaker-W. R. Cleveland Sta. 4 (2076.99), and Coker's 4 in 1 (2043.71) following in order, as shown in Table IX.

8. The variety having the highest Count-Strength Product for 32s yarn was Stoneville 2B (1846.31), followed in order by Coker's 4 in 1 (1754.64), Wanamaker-W. R. Cleveland Sta. 4 (1721.93), and West Texas Paymaster (1703.12), as shown in Table IX.

9. The variety having the highest Count-Strength Product for 36s yarn was Wanamaker-W. R. Cleveland Sta. 4 (1618.04), followed in order by Georgia Upland (1600.39), Coker's Clevevilt #7 (1563.62), and Stoneville 2B (1551.73), as shown in Table IX.

10. The Stoneville 2B strain showed a greater percentage of average length fibers than did the other strains, as shown in Tables III and VI.

CONCLUSIONS

The first conclusion that must be drawn from the results of these tests is that small lots of cotton run on regular machinery are not sufficiently uniform to enable any definite statements to be made about the test results.

There are, however, factors in these tests which might be interpreted as trends which would tend to favor one cotton over another in large scale processing.

For example, in most of the average results, the Stoneville 2B strain seems to show up better than any of the other varieties tested. When compared with the Georgia Upland (which was taken as a standard) the Stoneville 2B has a higher Break-Count Factor for yarns under 33s in count and also has a higher Weighted-Average Strength, as determined by using the method of least squares. This would tend to indicate that for coarser counts, the Stoneville 2B cotton would be of greater value to the mill than would the Georgia Upland. More comprehensive tests would have to be made before this fact could be definitely verified.

Further analysis of results also show that the Wana-maker-W.R. Cleveland Sta. 4 variety trends toward being as good a strain for the higher counts and compares favorably at the lower end of the count range.

It is evident from the test results that the D & P L - 11A, Deltapine 12B, and Coker's Clevewilt #7 are definitely

inferior grades and would not be of as much value as either the Georgia Upland or the other four varieties. But the Coker's Cleve wilt #7 and the Deltapine 12B are definitely better strains than the D & P L - 11A.

Two of the new varieties apparently are **about** equal in value to the Georgia Upland. These are the **Dixie Triumph** 8 and the Coker's 4 in 1. These two strains show **about** the same Break-Count Factors throughout the range of counts as the Georgia Upland and have almost the same Weighted-Average Breaking Strength. The Coker's 4 in 1 seems to be slightly better than the Dixie Triumph 8.

The above conclusions are drawn to show whether the value to the mill (therefore cash value to the farmer) would be as much for these new strains as is the Georgia Upland.

There are, however, other factors which the farmer would have to consider before changing from the **regular** Georgia Upland mixed strains to one or another of **these new** pure bred strains. Some of these factors are: Yield **per** acre, disease resistance, grade, and seed value.

The conclusion is that all of these factors **being** the same, the farmer would not profit by changing varieties unless the mill would pay a premium for the new variety lint.

The mill would probably prefer the Stoneville 2B or Wanamaker-W.R. Cleveland Sta. 4 in preference to the Georgia Upland and might possibly pay a slight premium. The tests, however, are not conclusive enough to warrant a definite

statement as to the amount of premium that the mill would be willing to pay for these two varieties since certain factors involved in the processing (such as **waste**) were not studied in these tests because of the smallness of the lots of material at hand.

SECTION II

Table XI: Counts, Skein Breaking Strength, and Count-
Strength Product of 22s Yarn.
Lot No. 1 Stoneville 2B

| Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product |
|----------------------|-------|--|-------------------------------|----------------------|-------|--|-------------------------------|
| 1 | 21.45 | 94.5 | 2027.05 | 26 | 22.08 | 96.0 | 2119.68 |
| 2 | 23.00 | 93.0 | 2139.00 | 27 | 22.42 | 90.5 | 2147.24 |
| 3 | 19.20 | 108.0 | 2073.60 | 28 | 21.85 | 94.5 | 2062.94 |
| 4 | 20.35 | 92.5 | 1882.38 | 29 | 21.60 | 101.0 | 2181.60 |
| 5 | 20.60 | 95.0 | 1957.00 | 30 | 20.88 | 105.5 | 2202.84 |
| 6 | 18.55 | 108.0 | 2003.40 | 31 | 21.25 | 107.0 | 2271.61 |
| 7 | 20.85 | 89.0 | 1855.65 | 32 | 21.01 | 96.0 | 2016.96 |
| 8 | 21.85 | 91.0 | 1988.35 | 33 | 21.28 | 96.5 | 2055.52 |
| 9 | 20.90 | 102.0 | 2131.80 | 34 | 20.79 | 103.5 | 2151.77 |
| 10 | 19.75 | 98.0 | 1935.50 | 35 | 21.51 | 103.5 | 2226.29 |
| 11 | 21.50 | 95.0 | 2042.50 | 36 | 21.10 | 96.6 | 2036.15 |
| 12 | 21.30 | 99.0 | 2108.70 | 37 | 22.37 | 96.0 | 2147.52 |
| 13 | 20.25 | 102.0 | 2065.50 | 38 | 21.01 | 96.0 | 2016.96 |
| 14 | 21.35 | 92.0 | 1964.20 | 39 | 21.65 | 94.5 | 2045.93 |
| 15 | 19.40 | 111.0 | 2153.40 | 40 | 24.39 | 85.0 | 2073.15 |
| 16 | 23.40 | 85.0 | 1989.00 | 41 | 20.85 | 101.0 | 2103.85 |
| 17 | 20.85 | 93.5 | 1949.48 | 42 | 21.98 | 94.5 | 2077.11 |
| 18 | 22.40 | 87.5 | 1960.00 | 43 | 20.92 | 97.5 | 2039.70 |
| 19 | 21.20 | 99.5 | 2109.40 | 44 | 23.26 | 85.0 | 1977.10 |
| 20 | 22.50 | 84.5 | 1901.25 | 45 | 20.49 | 97.5 | 1997.78 |
| 21 | 21.60 | 101.5 | 2192.40 | 46 | 22.32 | 88.5 | 1975.32 |
| 22 | 21.60 | 95.0 | 2052.00 | 47 | 22.27 | 87.5 | 1948.33 |
| 23 | 20.70 | 98.0 | 2028.60 | 48 | 22.57 | 91.0 | 2053.87 |
| 24 | 20.80 | 98.5 | 2018.25 | 49 | 20.79 | 93.0 | 1933.47 |
| 25 | 20.96 | 96.5 | 2022.64 | 50 | 22.78 | 92.0 | 2095.76 |
| Av. | 21.84 | 95.9 | 2096.20 | | | | |

Table XII: Counts, Skein Breaking Strength, and Count-
Strength Product of 22s Yarn.
Lot No. 2 D & P L - 11A

| Spec-imen No. | Count Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec-imen No. | Count Skein Breaking Strength (in lbs.) | Count- Strength Product |
|---------------|---|-------------------------|---------------|---|-------------------------|
| 1 | 22.75 | 76.5 | 26 | 22.68 | 78.0 |
| 2 | 22.00 | 86.5 | 27 | 22.38 | 79.0 |
| 3 | 21.20 | 79.5 | 28 | 20.62 | 85.0 |
| 4 | 21.20 | 83.5 | 29 | 23.42 | 80.5 |
| 5 | 22.25 | 80.5 | 30 | 23.87 | 76.5 |
| 6 | 22.25 | 75.5 | 31 | 22.73 | 81.5 |
| 7 | 22.45 | 86.5 | 32 | 22.17 | 83.5 |
| 8 | 22.40 | 84.0 | 33 | 23.75 | 85.5 |
| 9 | 22.45 | 75.5 | 34 | 23.31 | 78.0 |
| 10 | 21.95 | 78.0 | 35 | 21.88 | 83.5 |
| 11 | 23.60 | 82.0 | 36 | 20.92 | 87.0 |
| 12 | 20.90 | 88.5 | 37 | 22.62 | 87.5 |
| 13 | 23.00 | 76.0 | 38 | 23.98 | 80.5 |
| 14 | 23.10 | 84.0 | 39 | 22.52 | 84.5 |
| 15 | 22.30 | 91.0 | 40 | 21.51 | 85.0 |
| 16 | 22.00 | 88.0 | 41 | 22.99 | 80.5 |
| 17 | 23.20 | 76.0 | 42 | 22.32 | 89.0 |
| 18 | 24.40 | 75.0 | 43 | 22.03 | 81.5 |
| 19 | 22.45 | 87.0 | 44 | 20.75 | 96.5 |
| 20 | 22.00 | 85.0 | 45 | 23.42 | 79.0 |
| 21 | 20.88 | 87.5 | 46 | 22.08 | 90.0 |
| 22 | 23.15 | 78.0 | 47 | 20.58 | 96.0 |
| 23 | 23.09 | 83.5 | 48 | 21.83 | 88.5 |
| 24 | 21.74 | 83.0 | 49 | 23.64 | 76.5 |
| 25 | 23.15 | 82.0 | 50 | 21.51 | 91.0 |
| | | | Av. | 22.39 | 83.0 |
| | | | | | 1860.38 |

Table XIII: Counts, Skein Breaking Strength, and Count-Strength Product of 22s Yarn.
Lot No. 3 Dixie Triumph 8

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 21.01 | 89.0 | 1869.89 | 26 | 23.58 | 82.0 | 1933.56 |
| 2 | 23.36 | 89.0 | 2079.04 | 27 | 22.68 | 87.0 | 1973.16 |
| 3 | 23.70 | 80.0 | 1896.00 | 28 | 23.81 | 75.0 | 1785.75 |
| 4 | 23.76 | 82.0 | 1907.32 | 29 | 21.98 | 93.0 | 2044.14 |
| 5 | 22.94 | 83.5 | 1915.49 | 30 | 24.27 | 78.0 | 1893.06 |
| 6 | 23.64 | 79.0 | 1867.56 | 31 | 23.92 | 92.0 | 1961.44 |
| 7 | 22.37 | 87.0 | 1946.19 | 32 | 23.53 | 75.0 | 1764.75 |
| 8 | 23.53 | 82.0 | 1929.46 | 33 | 23.58 | 87.5 | 2063.25 |
| 9 | 21.60 | 95.0 | 2052.00 | 34 | 22.73 | 85.0 | 1932.05 |
| 10 | 23.26 | 83.5 | 1942.21 | 35 | 19.76 | 97.5 | 1926.60 |
| 11 | 22.62 | 83.0 | 1877.46 | 36 | 23.53 | 87.0 | 2047.11 |
| 12 | 23.92 | 78.0 | 1865.76 | 37 | 23.26 | 86.0 | 2000.36 |
| 13 | 22.99 | 89.0 | 2046.11 | 38 | 21.98 | 81.5 | 1791.37 |
| 14 | 24.10 | 76.5 | 1843.65 | 39 | 21.65 | 83.0 | 1796.95 |
| 15 | 21.74 | 95.0 | 2065.30 | 40 | 22.94 | 87.5 | 2007.25 |
| 16 | 23.36 | 80.0 | 1868.80 | 41 | 23.31 | 90.0 | 2097.90 |
| 17 | 22.62 | 87.0 | 1967.94 | 42 | 22.57 | 86.0 | 1941.02 |
| 18 | 23.58 | 81.0 | 1909.98 | 43 | 22.94 | 81.5 | 1869.61 |
| 19 | 22.73 | 83.0 | 1886.59 | 44 | 22.99 | 82.0 | 1885.18 |
| 20 | 23.87 | 81.5 | 1945.41 | 45 | 24.27 | 85.0 | 2062.95 |
| 21 | 22.88 | 90.0 | 2052.00 | 46 | 23.15 | 83.0 | 1921.45 |
| 22 | 24.75 | 78.0 | 1930.50 | 47 | 22.32 | 93.0 | 2075.76 |
| 23 | 21.83 | 93.0 | 2030.19 | 48 | 23.36 | 80.0 | 1868.80 |
| 24 | 23.87 | 80.5 | 1921.54 | 49 | 23.70 | 91.5 | 2168.55 |
| 25 | 23.09 | 86.0 | 1985.74 | 50 | 22.57 | 83.5 | 1876.25 |
| Av. | | | | 23.02 | 84.6 | 1949.33 | |

Table XIV: Counts, Skein Breaking Strength, and Count-Strength Product of 22s Yarn.
Lot No. 4 Deltapine 12B

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 20.33 | 101.5 | 2063.50 | 26 | 21.51 | 90.5 | 1946.66 |
| 2 | 22.22 | 87.5 | 1944.25 | 27 | 21.28 | 87.5 | 1862.00 |
| 3 | 21.60 | 93.0 | 2008.80 | 28 | 22.99 | 78.0 | 1793.22 |
| 4 | 21.93 | 93.0 | 2039.49 | 29 | 21.01 | 90.5 | 1901.41 |
| 5 | 23.26 | 86.0 | 2000.36 | 30 | 20.70 | 100.0 | 2070.00 |
| 6 | 24.21 | 83.0 | 2009.43 | 31 | 20.75 | 99.0 | 2054.25 |
| 7 | 23.15 | 87.0 | 2014.05 | 32 | 21.83 | 88.5 | 1951.96 |
| 8 | 21.32 | 89.0 | 1897.48 | 33 | 20.83 | 95.0 | 1978.85 |
| 9 | 22.62 | 91.0 | 2058.42 | 34 | 19.31 | 95.5 | 1872.76 |
| 10 | 22.73 | 86.0 | 1954.78 | 35 | 22.73 | 83.5 | 1897.96 |
| 11 | 20.49 | 107.0 | 2192.43 | 36 | 21.51 | 91.5 | 1968.17 |
| 12 | 21.01 | 96.0 | 2016.96 | 37 | 22.88 | 90.0 | 2059.20 |
| 13 | 22.08 | 88.5 | 1954.08 | 38 | 21.60 | 85.0 | 1836.00 |
| 14 | 21.28 | 96.0 | 2042.88 | 39 | 23.47 | 81.5 | 1912.81 |
| 15 | 20.08 | 98.0 | 1967.84 | 40 | 22.42 | 91.5 | 2051.43 |
| 16 | 21.01 | 97.5 | 2048.48 | 41 | 23.04 | 84.5 | 1946.88 |
| 17 | 21.28 | 90.0 | 1915.20 | 42 | 21.37 | 88.5 | 1891.25 |
| 18 | 21.88 | 91.5 | 2002.02 | 43 | 21.65 | 91.0 | 1970.15 |
| 19 | 22.22 | 90.0 | 1999.80 | 44 | 22.42 | 83.0 | 1860.86 |
| 20 | 21.74 | 90.5 | 1967.47 | 45 | 21.55 | 93.0 | 2004.15 |
| 21 | 23.26 | 83.5 | 1942.21 | 46 | 21.97 | 89.0 | 1955.33 |
| 22 | 22.12 | 93.0 | 2057.16 | 47 | 23.58 | 80.0 | 1886.40 |
| 23 | 21.51 | 97.5 | 2097.23 | 48 | 21.28 | 91.5 | 1947.12 |
| 24 | 23.36 | 81.0 | 1892.16 | 49 | 22.73 | 82.5 | 1875.23 |
| 25 | 21.88 | 86.0 | 1881.68 | 50 | 21.69 | 94.0 | 2049.71 |
| Av. | | | | 21.95 | 88.3 | 1934.65 | |

Table XV: Counts, Skein Breaking Strength, and Count-Strength Product of 22s Yarn.
Lot No. 5 Wanamaker-W. R. Cleveland Sta. 4

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 23.53 | 86.0 | 2023.58 | 26 | 21.28 | 98.0 | 2085.44 |
| 2 | 22.88 | 86.0 | 1967.68 | 27 | 23.26 | 87.0 | 2023.62 |
| 3 | 21.19 | 102.0 | 2161.38 | 28 | 22.62 | 94.5 | 2137.59 |
| 4 | 20.70 | 100.0 | 2070.00 | 29 | 21.33 | 102.5 | 2242.70 |
| 5 | 23.58 | 88.5 | 2086.83 | 30 | 22.27 | 92.5 | 2059.98 |
| 6 | 23.98 | 81.5 | 1954.37 | 31 | 23.92 | 83.5 | 1997.32 |
| 7 | 21.79 | 93.5 | 2037.37 | 32 | 23.31 | 82.5 | 1923.08 |
| 8 | 19.23 | 110.5 | 2124.92 | 33 | 21.74 | 100.5 | 2184.82 |
| 9 | 19.69 | 105.0 | 2067.45 | 34 | 21.55 | 103.0 | 2219.65 |
| 10 | 23.15 | 93.0 | 2152.95 | 35 | 22.83 | 91.0 | 2077.53 |
| 11 | 20.00 | 97.5 | 1950.00 | 36 | 23.26 | 88.5 | 2058.51 |
| 12 | 21.65 | 96.5 | 2089.23 | 37 | 20.66 | 101.5 | 2096.99 |
| 13 | 20.49 | 98.5 | 2018.27 | 38 | 21.83 | 93.0 | 2030.19 |
| 14 | 22.03 | 96.0 | 2114.88 | 39 | 21.93 | 93.0 | 2039.49 |
| 15 | 22.08 | 102.0 | 2252.16 | 40 | 23.58 | 81.5 | 1921.77 |
| 16 | 20.75 | 102.5 | 2126.88 | 41 | 20.83 | 96.5 | 2010.10 |
| 17 | 20.08 | 108.0 | 2168.64 | 42 | 21.83 | 92.5 | 2019.28 |
| 18 | 21.60 | 92.5 | 1998.00 | 43 | 22.12 | 86.5 | 1913.38 |
| 19 | 21.83 | 93.0 | 2030.19 | 44 | 22.08 | 94.0 | 2075.52 |
| 20 | 21.65 | 87.5 | 1894.38 | 45 | 21.01 | 101.0 | 2122.01 |
| 21 | 21.23 | 92.5 | 1963.78 | 46 | 20.53 | 107.5 | 2206.98 |
| 22 | 22.32 | 96.5 | 2153.88 | 47 | 21.41 | 105.5 | 2256.76 |
| 23 | 23.42 | 89.0 | 2084.38 | 48 | 22.57 | 91.0 | 2053.87 |
| 24 | 21.83 | 91.0 | 1986.53 | 49 | 20.53 | 94.5 | 1940.09 |
| 25 | 21.98 | 105.0 | 2307.90 | 50 | 22.32 | 93.0 | 2075.76 |
| Av. | | | | 21.87 | 94.9 | 2076.99 | |

Table XVI: Counts, Skein Breaking Strength, and Count-Strength Product of 22s Yarn.
Lot No. 6 Coker's 4 in 1.

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 21.65 | 98.5 | 2132.53 | 26 | 20.53 | 110.0 | 2258.30 |
| 2 | 21.55 | 101.5 | 2187.33 | 27 | 21.10 | 103.5 | 2183.85 |
| 3 | 22.52 | 89.5 | 2015.54 | 28 | 21.79 | 94.5 | 2059.16 |
| 4 | 20.28 | 114.0 | 2311.92 | 29 | 20.96 | 99.5 | 2085.52 |
| 5 | 22.94 | 89.5 | 2053.13 | 30 | 21.69 | 92.5 | 2006.33 |
| 6 | 20.79 | 103.5 | 2151.77 | 31 | 21.69 | 92.5 | 2006.33 |
| 7 | 21.37 | 96.5 | 2062.31 | 32 | 21.88 | 86.0 | 1881.68 |
| 8 | 21.05 | 102.0 | 2147.10 | 33 | 21.05 | 102.0 | 2147.10 |
| 9 | 23.09 | 85.0 | 1962.65 | 34 | 22.08 | 96.0 | 2119.68 |
| 10 | 21.55 | 102.5 | 2208.88 | 35 | 22.03 | 91.5 | 2015.75 |
| 11 | 21.51 | 100.0 | 2151.00 | 36 | 21.88 | 90.5 | 1980.14 |
| 12 | 20.83 | 100.5 | 2093.42 | 37 | 21.74 | 86.0 | 1869.64 |
| 13 | 22.27 | 88.5 | 1970.90 | 38 | 21.32 | 94.0 | 2004.08 |
| 14 | 22.88 | 86.5 | 1979.12 | 39 | 21.28 | 96.5 | 2053.52 |
| 15 | 21.88 | 93.0 | 2044.84 | 40 | 22.22 | 88.5 | 1966.47 |
| 16 | 21.55 | 97.5 | 2101.13 | 41 | 21.41 | 104.0 | 2226.60 |
| 17 | 21.28 | 97.5 | 2074.80 | 42 | 21.83 | 96.5 | 2106.60 |
| 18 | 24.39 | 81.0 | 1975.59 | 43 | 21.93 | 94.0 | 2061.42 |
| 19 | 21.01 | 99.0 | 2079.99 | 44 | 22.73 | 85.5 | 1943.42 |
| 20 | 20.88 | 100.0 | 2088.00 | 45 | 20.88 | 104.0 | 2171.52 |
| 21 | 21.23 | 96.5 | 2049.70 | 46 | 21.69 | 97.5 | 2114.78 |
| 22 | 21.51 | 100.5 | 2161.76 | 47 | 21.83 | 95.0 | 2073.85 |
| 23 | 19.92 | 103.0 | 2051.76 | 48 | 21.79 | 94.5 | 2059.16 |
| 24 | 21.32 | 97.0 | 2068.04 | 49 | 20.96 | 111.5 | 2337.04 |
| 25 | 20.12 | 106.0 | 2132.72 | 50 | 22.08 | 96.0 | 2116.80 |
| Av. | | | | 21.59 | 94.66 | 2043.71 | |

Table XVII: Counts, Skein Breaking Strength, and Count-Strength Product of 22s Yarn.
Lot No. 7 Coker's Clewewilt #7

| Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product |
|----------------------|-------|--|-------------------------------|----------------------|-------|--|-------------------------------|
| 1 | 20.66 | 103.5 | 2138.31 | 26 | 22.47 | 84.0 | 1887.48 |
| 2 | 22.62 | 84.5 | 1911.31 | 27 | 22.74 | 76.5 | 1739.61 |
| 3 | 23.36 | 79.0 | 1845.44 | 28 | 22.42 | 90.0 | 2017.80 |
| 4 | 23.70 | 76.5 | 1813.05 | 29 | 22.26 | 88.5 | 2081.77 |
| 5 | 21.14 | 89.5 | 1892.03 | 30 | 22.47 | 85.0 | 1865.01 |
| 6 | 22.08 | 95.0 | 2097.60 | 31 | 21.65 | 96.5 | 2089.23 |
| 7 | 22.68 | 80.0 | 1814.40 | 32 | 20.70 | 86.0 | 1780.20 |
| 8 | 22.12 | 83.5 | 1847.02 | 33 | 21.55 | 89.5 | 1928.37 |
| 9 | 22.12 | 89.0 | 1968.68 | 34 | 22.83 | 82.0 | 1872.06 |
| 10 | 23.47 | 80.5 | 1889.34 | 35 | 22.73 | 84.5 | 1920.69 |
| 11 | 21.83 | 90.0 | 1964.20 | 36 | 21.98 | 83.0 | 1824.34 |
| 12 | 22.82 | 90.0 | 2053.80 | 37 | 22.17 | 91.0 | 2017.47 |
| 13 | 23.26 | 84.5 | 1965.47 | 38 | 23.15 | 82.0 | 1898.30 |
| 14 | 22.17 | 87.0 | 1928.79 | 39 | 21.93 | 95.0 | 2083.35 |
| 15 | 22.42 | 86.0 | 1928.12 | 40 | 22.62 | 85.0 | 1922.70 |
| 16 | 20.20 | 104.0 | 2100.80 | 41 | 22.37 | 86.0 | 1923.82 |
| 17 | 22.32 | 88.0 | 1964.16 | 42 | 21.47 | 100.0 | 2147.00 |
| 18 | 22.32 | 87.5 | 1953.00 | 43 | 22.62 | 85.0 | 1922.70 |
| 19 | 21.46 | 91.0 | 1952.86 | 44 | 22.57 | 91.5 | 2065.16 |
| 20 | 21.79 | 92.0 | 2004.68 | 45 | 20.70 | 95.0 | 1966.50 |
| 21 | 21.74 | 93.0 | 2012.82 | 46 | 20.62 | 97.0 | 2000.14 |
| 22 | 23.36 | 86.0 | 2008.96 | 47 | 22.52 | 86.0 | 1936.72 |
| 23 | 22.42 | 81.0 | 1816.02 | 48 | 21.37 | 87.0 | 1859.19 |
| 24 | 20.70 | 95.0 | 1966.50 | 49 | 22.73 | 83.0 | 1886.59 |
| 25 | 23.04 | 87.5 | 2016.00 | 50 | 21.98 | 81.0 | 1780.38 |

Av. 22.19 87.83 1948.95

Table XVIII: Counts, Skein Breaking Strength, and Count-
Strength Product of 22s Yarn.
Lot No. 8 West Texas Paymaster

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product |
|---------------|-------|-----------------------------------|----------------------------|---------------|-------|-----------------------------------|----------------------------|
| 1 | 21.41 | 102.0 | 2183.82 | 26 | 21.32 | 101.5 | 2163.98 |
| 2 | 21.41 | 88.5 | 1894.79 | 27 | 21.28 | 94.5 | 2010.96 |
| 3 | 20.41 | 96.0 | 1959.36 | 28 | 20.58 | 105.5 | 2171.19 |
| 4 | 20.58 | 97.5 | 2006.55 | 29 | 21.37 | 89.0 | 1901.93 |
| 5 | 21.01 | 102.5 | 2153.53 | 30 | 21.83 | 91.5 | 1997.45 |
| 6 | 21.51 | 87.5 | 1882.13 | 31 | 20.92 | 106.0 | 2217.52 |
| 7 | 21.10 | 91.5 | 1930.54 | 32 | 21.19 | 89.0 | 1885.91 |
| 8 | 20.20 | 91.5 | 1848.30 | 33 | 21.51 | 95.0 | 2043.45 |
| 9 | 21.19 | 100.5 | 2129.60 | 34 | 18.98 | 100.0 | 1898.00 |
| 10 | 20.08 | 84.5 | 1696.76 | 35 | 21.88 | 100.0 | 2188.00 |
| 11 | 19.88 | 105.0 | 2097.90 | 36 | 21.37 | 86.0 | 1837.82 |
| 12 | 20.12 | 96.5 | 1941.58 | 37 | 21.83 | 91.5 | 1997.45 |
| 13 | 21.51 | 95.0 | 2043.45 | 38 | 19.92 | 98.0 | 1952.16 |
| 14 | 21.46 | 88.5 | 1899.21 | 39 | 20.75 | 96.0 | 1992.00 |
| 15 | 21.10 | 93.0 | 1962.30 | 40 | 20.75 | 91.5 | 1898.63 |
| 16 | 19.61 | 99.0 | 1941.39 | 41 | 21.32 | 100.0 | 2132.00 |
| 17 | 20.16 | 95.0 | 1915.20 | 42 | 20.24 | 93.5 | 1892.44 |
| 18 | 21.54 | 90.5 | 1959.33 | 43 | 19.88 | 104.5 | 2077.46 |
| 19 | 20.33 | 103.5 | 2104.16 | 44 | 21.10 | 91.0 | 1920.10 |
| 20 | 20.92 | 93.5 | 1956.02 | 45 | 22.27 | 86.0 | 1915.22 |
| 21 | 20.66 | 102.0 | 2107.32 | 46 | 21.01 | 97.5 | 2048.48 |
| 22 | 21.51 | 94.5 | 2032.70 | 47 | 20.20 | 94.5 | 1908.90 |
| 23 | 21.55 | 100.0 | 2155.00 | 48 | 21.19 | 94.5 | 2002.45 |
| 24 | 21.05 | 100.0 | 2105.00 | 49 | 21.32 | 87.0 | 1854.84 |
| 25 | 22.03 | 89.0 | 1960.67 | 50 | 20.88 | 101.0 | 2108.88 |
| | | | | Av. | 20.93 | 93.53 | 1957.58 |

Table XIX: Counts, Skein Breaking Strength, and Count-Strength Product of 22s Yarn.
Lot No. 9 Georgia Upland - 1" Mid.

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 21.90 | 95.0 | 2080.50 | 26 | 22.03 | 97.5 | 2147.53 |
| 2 | 22.20 | 99.0 | 2197.80 | 27 | 22.62 | 94.0 | 2126.28 |
| 3 | 22.45 | 93.0 | 2087.85 | 28 | 21.19 | 103.5 | 2193.17 |
| 4 | 20.80 | 98.5 | 2048.80 | 29 | 21.69 | 90.0 | 1952.10 |
| 5 | 21.10 | 102.5 | 2162.25 | 30 | 23.81 | 83.0 | 1976.23 |
| 6 | 22.25 | 87.0 | 1935.75 | 31 | 22.73 | 91.5 | 2079.80 |
| 7 | 20.95 | 103.5 | 2168.33 | 32 | 22.42 | 93.5 | 2096.27 |
| 8 | 22.95 | 85.0 | 1950.75 | 33 | 21.14 | 106.0 | 2040.84 |
| 9 | 21.50 | 92.0 | 1978.00 | 34 | 22.73 | 88.5 | 2016.03 |
| 10 | 21.35 | 95.0 | 2028.25 | 35 | 21.60 | 98.5 | 2127.60 |
| 11 | 21.40 | 94.0 | 2011.60 | 36 | 21.83 | 100.0 | 2183.00 |
| 12 | 21.65 | 94.0 | 2035.10 | 37 | 21.55 | 91.5 | 1971.83 |
| 13 | 21.50 | 99.0 | 2128.50 | 38 | 21.14 | 103.5 | 2187.99 |
| 14 | 22.20 | 87.5 | 1942.50 | 39 | 23.04 | 86.0 | 1981.44 |
| 15 | 21.35 | 105.5 | 2252.43 | 40 | 22.99 | 88.5 | 2034.62 |
| 16 | 19.75 | 105.5 | 2083.63 | 41 | 21.69 | 98.0 | 2125.62 |
| 17 | 22.05 | 97.5 | 2149.88 | 42 | 21.46 | 109.0 | 2339.14 |
| 18 | 22.25 | 90.0 | 2002.50 | 43 | 21.19 | 94.0 | 1991.86 |
| 19 | 21.25 | 100.5 | 2135.63 | 44 | 22.22 | 91.5 | 2033.13 |
| 20 | 21.55 | 99.5 | 2144.23 | 45 | 21.51 | 103.0 | 2215.53 |
| 21 | 22.73 | 92.0 | 2091.96 | 46 | 21.83 | 93.0 | 2030.19 |
| 22 | 21.98 | 96.0 | 2110.08 | 47 | 22.47 | 91.5 | 2056.01 |
| 23 | 21.37 | 94.0 | 2008.78 | 48 | 21.74 | 101.5 | 2206.61 |
| 24 | 20.92 | 104.0 | 2175.68 | 49 | 21.19 | 100.5 | 2129.60 |
| 25 | 21.05 | 102.5 | 2157.63 | 50 | 20.83 | 90.0 | 1874.70 |

Av. 21.78 95.99 2090.66

Table XX: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 1 Stoneville 2B

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 34.48 | 53.5 | 1844.68 | 26 | 33.56 | 55.5 | 1862.58 |
| 2 | 30.12 | 60.0 | 1807.20 | 27 | 34.72 | 54.5 | 1892.24 |
| 3 | 32.79 | 53.5 | 1754.27 | 28 | 31.25 | 60.0 | 1875.00 |
| 4 | 33.90 | 54.5 | 1847.55 | 29 | 33.90 | 56.0 | 1898.40 |
| 5 | 32.57 | 58.5 | 1905.35 | 30 | 34.97 | 52.5 | 1835.93 |
| 6 | 29.59 | 66.0 | 1952.94 | 31 | 30.77 | 63.5 | 1953.90 |
| 7 | 33.30 | 59.0 | 1966.47 | 32 | 31.55 | 57.5 | 1814.13 |
| 8 | 31.55 | 59.5 | 1877.23 | 33 | 33.67 | 53.5 | 1801.35 |
| 9 | 30.49 | 60.0 | 1820.40 | 34 | 31.45 | 58.0 | 1824.10 |
| 10 | 32.57 | 58.0 | 1889.06 | 35 | 32.05 | 56.0 | 1794.80 |
| 11 | 28.49 | 63.5 | 1809.12 | 36 | 32.47 | 57.0 | 1850.79 |
| 12 | 32.25 | 57.0 | 1838.25 | 37 | 31.06 | 60.5 | 1879.13 |
| 13 | 31.75 | 61.5 | 1952.63 | 38 | 32.26 | 57.0 | 1838.82 |
| 14 | 30.30 | 61.5 | 1863.45 | 39 | 32.05 | 52.5 | 1682.63 |
| 15 | 30.21 | 61.5 | 1857.92 | 40 | 31.95 | 61.5 | 1964.93 |
| 16 | 34.36 | 51.0 | 1752.36 | 41 | 31.35 | 60.5 | 1806.68 |
| 17 | 30.21 | 63.5 | 1918.34 | 42 | 32.47 | 56.5 | 1834.56 |
| 18 | 31.55 | 58.5 | 1845.68 | 43 | 29.94 | 52.5 | 1571.85 |
| 19 | 29.24 | 62.5 | 1827.50 | 44 | 29.41 | 55.0 | 1618.75 |
| 20 | 30.77 | 58.0 | 1784.66 | 45 | 30.30 | 63.5 | 1924.05 |
| 21 | 31.15 | 61.5 | 1915.72 | 46 | 31.25 | 56.0 | 1750.00 |
| 22 | 33.11 | 53.5 | 1771.38 | 47 | 29.15 | 60.5 | 1763.58 |
| 23 | 34.48 | 52.5 | 1810.20 | 48 | 32.26 | 58.0 | 1871.08 |
| 24 | 32.57 | 52.5 | 1709.92 | 49 | 30.30 | 61.5 | 1863.45 |
| 25 | 31.15 | 58.0 | 1806.70 | 50 | 32.79 | 54.5 | 1787.06 |

Av. 31.80 58.06 1846.31

Table XXI: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 2: D & P L - 11A

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 31.65 | 49.0 | 1550.85 | 26 | 33.11 | 50.0 | 1655.50 |
| 2 | 30.96 | 52.0 | 1609.92 | 27 | 35.46 | 44.5 | 1613.43 |
| 3 | 32.89 | 48.5 | 1595.17 | 28 | 32.36 | 50.5 | 1634.18 |
| 4 | 30.40 | 57.0 | 1732.80 | 29 | 34.36 | 47.5 | 1632.10 |
| 5 | 33.33 | 48.0 | 1599.84 | 30 | 31.45 | 49.0 | 1541.05 |
| 6 | 31.75 | 52.5 | 1666.88 | 31 | 33.67 | 44.0 | 1481.48 |
| 7 | 32.79 | 52.5 | 1721.47 | 32 | 32.89 | 47.0 | 1548.83 |
| 8 | 32.15 | 50.5 | 1623.58 | 33 | 32.89 | 50.5 | 1660.95 |
| 9 | 34.13 | 47.0 | 1604.11 | 34 | 30.21 | 52.5 | 1586.03 |
| 10 | 29.76 | 51.5 | 1532.64 | 35 | 32.68 | 49.0 | 1601.32 |
| 11 | 33.67 | 46.5 | 1565.66 | 36 | 33.53 | 46.0 | 1543.76 |
| 12 | 33.33 | 50.0 | 1666.50 | 37 | 32.36 | 44.0 | 1423.86 |
| 13 | 32.47 | 50.0 | 1623.50 | 38 | 32.47 | 49.5 | 1607.27 |
| 14 | 32.47 | 49.5 | 1607.27 | 39 | 33.67 | 46.5 | 1565.65 |
| 15 | 34.25 | 49.0 | 1678.25 | 40 | 34.36 | 45.5 | 1563.38 |
| 16 | 31.85 | 52.0 | 1656.20 | 41 | 34.84 | 47.0 | 1637.48 |
| 17 | 32.36 | 48.0 | 1553.28 | 42 | 33.56 | 47.5 | 1594.10 |
| 18 | 31.65 | 57.0 | 1804.05 | 43 | 32.26 | 50.0 | 1613.00 |
| 19 | 32.58 | 50.0 | 1634.00 | 44 | 34.60 | 48.0 | 1660.80 |
| 20 | 32.36 | 47.5 | 1537.10 | 45 | 32.68 | 48.0 | 1568.64 |
| 21 | 32.57 | 46.5 | 1514.50 | 46 | 32.68 | 49.0 | 1601.32 |
| 22 | 32.15 | 52.5 | 1687.87 | 47 | 32.26 | 51.5 | 1663.53 |
| 23 | 31.15 | 50.5 | 1573.07 | 48 | 35.09 | 45.0 | 1579.05 |
| 24 | 34.25 | 46.5 | 1592.63 | 49 | 32.05 | 50.0 | 1602.50 |
| 25 | 37.31 | 41.5 | 1548.37 | 50 | 35.46 | 42.0 | 1489.32 |
| Av. | | | | 32.91 | 48.80 | 1600.00 | |

Table XXII: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 3 Dixie Triumph 8

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 33.56 | 50.0 | 1678.00 | 26 | 34.01 | 51.0 | 1734.51 |
| 2 | 34.60 | 47.5 | 1643.50 | 27 | 32.57 | 52.0 | 1693.46 |
| 3 | 33.44 | 56.0 | 1872.64 | 28 | 34.48 | 48.0 | 1655.04 |
| 4 | 33.33 | 56.5 | 1883.14 | 29 | 34.48 | 48.0 | 1655.04 |
| 5 | 33.11 | 52.5 | 1738.28 | 30 | 32.47 | 53.5 | 1737.15 |
| 6 | 34.48 | 47.5 | 1637.80 | 31 | 32.89 | 50.0 | 1644.50 |
| 7 | 31.95 | 52.5 | 1677.38 | 32 | 34.25 | 51.0 | 1746.75 |
| 8 | 33.22 | 52.0 | 1727.44 | 33 | 33.44 | 49.0 | 1638.56 |
| 9 | 33.67 | 47.0 | 1599.33 | 34 | 32.58 | 43.0 | 1405.24 |
| 10 | 34.48 | 47.0 | 1620.56 | 35 | 33.11 | 52.0 | 1721.72 |
| 11 | 34.48 | 45.0 | 1551.60 | 36 | 34.84 | 47.5 | 1654.90 |
| 12 | 33.22 | 52.0 | 1727.44 | 37 | 33.90 | 51.0 | 1728.90 |
| 13 | 33.33 | 51.5 | 1716.50 | 38 | 34.72 | 49.0 | 1701.28 |
| 14 | 36.36 | 47.0 | 1708.92 | 39 | 33.44 | 53.5 | 1789.04 |
| 15 | 33.90 | 48.0 | 1627.20 | 40 | 35.71 | 46.5 | 1660.42 |
| 16 | 32.36 | 53.5 | 1731.26 | 41 | 35.34 | 47.5 | 1678.65 |
| 17 | 33.67 | 50.0 | 1683.50 | 42 | 33.56 | 52.0 | 1745.12 |
| 18 | 34.48 | 51.0 | 1758.48 | 43 | 32.26 | 53.5 | 1725.91 |
| 19 | 35.71 | 44.5 | 1589.10 | 44 | 33.56 | 49.0 | 1644.44 |
| 20 | 33.33 | 45.0 | 1499.85 | 45 | 34.01 | 49.0 | 1666.49 |
| 21 | 34.01 | 49.0 | 1666.49 | 46 | 34.36 | 46.5 | 1597.74 |
| 22 | 35.34 | 50.0 | 1767.00 | 47 | 34.13 | 49.0 | 1672.37 |
| 23 | 33.67 | 46.5 | 1604.55 | 48 | 34.01 | 47.5 | 1615.48 |
| 24 | 34.25 | 52.0 | 1781.00 | 49 | 35.71 | 47.0 | 1678.37 |
| 25 | 32.05 | 51.5 | 1650.58 | 50 | 33.90 | 48.0 | 1627.20 |

Av. 33.88 49.37 1672.66

Table XXIII: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 4 Deltapine 12B

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 34.60 | 46.5 | 1608.90 | 26 | 33.33 | 51.5 | 1716.50 |
| 2 | 36.36 | 45.0 | 1636.20 | 27 | 34.84 | 52.5 | 1829.10 |
| 3 | 34.25 | 49.0 | 1678.25 | 28 | 34.36 | 46.0 | 1580.56 |
| 4 | 36.10 | 51.0 | 1841.10 | 29 | 33.56 | 52.0 | 1745.12 |
| 5 | 33.67 | 51.0 | 1717.17 | 30 | 34.48 | 47.5 | 1637.80 |
| 6 | 33.78 | 48.0 | 1621.44 | 31 | 36.10 | 43.0 | 1660.60 |
| 7 | 34.36 | 48.0 | 1649.28 | 32 | 33.78 | 47.5 | 1604.55 |
| 8 | 33.44 | 50.0 | 1672.00 | 33 | 32.05 | 54.0 | 1730.70 |
| 9 | 34.48 | 47.5 | 1637.80 | 34 | 33.44 | 52.0 | 1738.88 |
| 10 | 34.97 | 45.0 | 1575.65 | 35 | 34.60 | 47.5 | 1643.50 |
| 11 | 36.63 | 44.0 | 1611.72 | 36 | 34.60 | 53.0 | 1836.80 |
| 12 | 32.26 | 51.0 | 1645.26 | 37 | 32.57 | 53.5 | 1744.50 |
| 13 | 35.46 | 47.5 | 1684.35 | 38 | 34.13 | 51.0 | 1740.53 |
| 14 | 34.72 | 47.5 | 1649.20 | 39 | 32.89 | 52.0 | 1710.28 |
| 15 | 36.23 | 46.0 | 1666.58 | 40 | 34.72 | 50.0 | 1736.00 |
| 16 | 35.84 | 48.0 | 1720.32 | 41 | 34.48 | 50.0 | 1724.00 |
| 17 | 36.10 | 48.0 | 1732.80 | 42 | 33.50 | 46.5 | 1557.75 |
| 18 | 34.25 | 49.0 | 1678.25 | 43 | 34.20 | 47.0 | 1607.40 |
| 19 | 34.25 | 51.0 | 1746.75 | 44 | 33.42 | 46.0 | 1537.32 |
| 20 | 32.47 | 52.0 | 1688.44 | 45 | 32.84 | 43.5 | 1428.54 |
| 21 | 34.36 | 46.5 | 1587.74 | 46 | 33.72 | 45.5 | 1534.36 |
| 22 | 33.11 | 52.0 | 1721.72 | 47 | 32.63 | 52.5 | 1713.08 |
| 23 | 34.72 | 51.0 | 1770.72 | 48 | 32.84 | 50.0 | 1642.00 |
| 24 | 32.68 | 55.0 | 1797.40 | 49 | 33.31 | 43.0 | 1598.88 |
| 25 | 35.71 | 50.0 | 1785.50 | 50 | 32.96 | 50.5 | 1664.48 |

Av. 34.16 49.10 1677.25

Table XXIV: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 5 Wanamaker-W. R. Cleveland Sta. 4

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 31.09 | 50.0 | 1754.50 | 36 | 34.36 | 51.0 | 1752.36 |
| 2 | 32.68 | 50.5 | 1645.29 | 37 | 33.00 | 56.0 | 1848.00 |
| 3 | 36.76 | 43.0 | 1580.68 | 38 | 33.90 | 52.5 | 1779.75 |
| 4 | 35.97 | 49.5 | 1780.52 | 39 | 33.63 | 49.0 | 1650.32 |
| 5 | 35.59 | 47.5 | 1690.53 | 40 | 34.36 | 51.5 | 1769.54 |
| 6 | 33.67 | 51.0 | 1717.17 | 41 | 34.25 | 47.0 | 1609.75 |
| 7 | 33.56 | 45.5 | 1526.98 | 42 | 33.67 | 49.0 | 1649.83 |
| 8 | 32.68 | 54.5 | 1781.06 | 43 | 34.84 | 49.0 | 1707.16 |
| 9 | 34.36 | 48.0 | 1659.28 | 44 | 32.68 | 53.5 | 1748.38 |
| 10 | 36.90 | 50.0 | 1845.00 | 45 | 34.48 | 46.5 | 1603.32 |
| 11 | 35.09 | 52.5 | 1842.22 | 46 | 33.56 | 51.0 | 1711.56 |
| 12 | 29.94 | 53.0 | 1586.82 | 47 | 33.56 | 54.5 | 1829.02 |
| 13 | 36.10 | 48.0 | 1732.80 | 48 | 34.48 | 48.5 | 1672.28 |
| 14 | 34.48 | 53.5 | 1844.68 | 49 | 35.84 | 46.5 | 1666.56 |
| 15 | 32.47 | 50.0 | 1623.50 | 50 | 33.11 | 50.0 | 1655.50 |
| 16 | 33.56 | 55.0 | 1845.80 | 51 | 33.22 | 53.5 | 1777.27 |
| 17 | 32.15 | 43.5 | 1752.18 | 52 | 35.46 | 44.0 | 1560.24 |
| 18 | 32.87 | 52.5 | 1726.73 | 53 | 33.90 | 52.5 | 1779.75 |
| 19 | 33.56 | 55.0 | 1845.80 | 54 | 34.48 | 51.0 | 1758.48 |
| 20 | 33.33 | 54.5 | 1816.49 | 55 | 35.09 | 48.5 | 1701.87 |
| 21 | 34.89 | 49.0 | 1707.16 | 56 | 34.48 | 45.0 | 1551.60 |
| 22 | 33.56 | 54.5 | 1829.02 | 57 | 31.53 | 53.5 | 1687.93 |
| 23 | 31.25 | 54.0 | 1687.50 | 58 | 33.00 | 54.5 | 1798.50 |
| 24 | 36.64 | 47.5 | 1739.93 | 59 | 34.01 | 49.0 | 1666.49 |
| 25 | 32.68 | 52.5 | 1715.70 | 60 | 35.71 | 49.0 | 1749.79 |
| Av. | | | | 34.01 | 50.63 | 1721.93 | |

Table XXV: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 6 Coker's 4 in 1

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count ² Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count ² Strength Product |
|--------------|-------|-----------------------------------|-------------------------------------|--------------|-------|-----------------------------------|-------------------------------------|
| 1 | 31.25 | 57.0 | 1781.25 | 26 | 32.47 | 51.5 | 1672.21 |
| 2 | 31.45 | 53.5 | 1682.58 | 27 | 32.79 | 57.0 | 1869.03 |
| 3 | 31.06 | 59.5 | 1848.07 | 28 | 31.55 | 56.0 | 1766.80 |
| 4 | 30.86 | 55.0 | 1697.30 | 29 | 33.22 | 57.0 | 1893.54 |
| 5 | 32.57 | 51.5 | 1677.36 | 30 | 32.89 | 47.0 | 1545.83 |
| 6 | 32.36 | 48.0 | 1553.28 | 31 | 32.79 | 54.5 | 1787.06 |
| 7 | 33.00 | 56.0 | 1848.00 | 32 | 31.35 | 54.5 | 1708.58 |
| 8 | 30.21 | 57.0 | 1721.97 | 33 | 35.71 | 44.0 | 1571.24 |
| 9 | 33.33 | 50.0 | 1666.50 | 34 | 30.77 | 61.5 | 1892.35 |
| 10 | 31.65 | 58.0 | 1835.70 | 35 | 31.55 | 57.0 | 1786.95 |
| 11 | 34.68 | 49.5 | 1716.66 | 36 | 33.56 | 46.5 | 1560.54 |
| 12 | 32.02 | 52.5 | 1681.05 | 37 | 33.44 | 52.0 | 1738.80 |
| 13 | 33.78 | 51.0 | 1722.87 | 38 | 32.15 | 56.0 | 1800.40 |
| 14 | 33.33 | 56.0 | 1866.40 | 39 | 29.59 | 59.5 | 1760.60 |
| 15 | 32.26 | 54.5 | 1758.17 | 40 | 29.85 | 59.0 | 1761.15 |
| 16 | 30.96 | 54.5 | 1687.32 | 41 | 30.21 | 61.5 | 1857.91 |
| 17 | 29.94 | 59.5 | 1781.43 | 42 | 29.59 | 55.5 | 1642.25 |
| 18 | 31.25 | 59.0 | 1843.75 | 43 | 32.36 | 59.0 | 1909.24 |
| 19 | 33.90 | 53.5 | 1813.65 | 44 | 29.50 | 62.5 | 1843.75 |
| 20 | 30.12 | 57.0 | 1716.84 | 45 | 32.79 | 52.5 | 1721.48 |
| 21 | 31.06 | 59.0 | 1832.54 | 46 | 30.67 | 51.5 | 1579.50 |
| 22 | 32.47 | 56.0 | 1818.32 | 47 | 29.67 | 59.0 | 1752.53 |
| 23 | 30.67 | 56.0 | 1717.52 | 48 | 32.15 | 56.0 | 1800.40 |
| 24 | 30.67 | 58.5 | 1794.20 | 49 | 33.67 | 51.5 | 1735.00 |
| 25 | 31.35 | 52.5 | 1645.88 | 50 | 30.49 | 61.5 | 1875.14 |

Av. 31.81 55.16 1754.64

Table XXVI: Counts, Skein Breaking Strength, and Count-
Strength Product of 32s Yarn.
Lot No. 7 Coker's Clevevilt #7

| Spec-imen No. | Count Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec-imen No. | Count Skein Breaking Strength (in lbs.) | Count- Strength Product |
|---------------|---|-------------------------|---------------|---|-------------------------|
| 1 | 33.90 | 1779.75 | 26 | 33.44 | 1689.72 |
| 2 | 32.47 | 1639.74 | 27 | 32.65 | 1797.40 |
| 3 | 32.68 | 1715.70 | 28 | 32.57 | 1530.79 |
| 4 | 33.22 | 1893.54 | 29 | 32.57 | 1791.53 |
| 5 | 31.75 | 1571.63 | 30 | 34.48 | 1724.00 |
| 6 | 34.25 | 1712.50 | 31 | 32.79 | 1721.48 |
| 7 | 33.56 | 1577.32 | 32 | 32.79 | 1606.71 |
| 8 | 32.36 | 1747.44 | 33 | 32.05 | 1634.55 |
| 9 | 31.85 | 1751.75 | 34 | 32.80 | 1672.80 |
| 10 | 31.75 | 1635.13 | 35 | 31.85 | 1735.85 |
| 11 | 33.33 | 1716.50 | 36 | 33.44 | 1605.12 |
| 12 | 32.79 | 1754.26 | 37 | 32.15 | 1752.17 |
| 13 | 33.90 | 1745.85 | 38 | 34.01 | 1632.48 |
| 14 | 32.26 | 1629.13 | 39 | 34.13 | 1399.13 |
| 15 | 32.26 | 1629.13 | 40 | 32.26 | 1580.74 |
| 16 | 32.68 | 1748.38 | 41 | 32.68 | 1683.02 |
| 17 | 32.05 | 1714.68 | 42 | 31.28 | 1657.84 |
| 18 | 32.47 | 1542.33 | 43 | 34.72 | 1458.34 |
| 19 | 33.56 | 1610.88 | 44 | 35.53 | 1649.84 |
| 20 | 30.77 | 1615.43 | 45 | 32.89 | 1529.39 |
| 21 | 32.57 | 1823.92 | 46 | 33.33 | 1633.17 |
| 22 | 33.67 | 1616.16 | 47 | 32.79 | 1606.71 |
| 23 | 31.75 | 1635.13 | 48 | 32.57 | 1677.36 |
| 24 | 32.26 | 1613.00 | 49 | 32.68 | 1665.68 |
| 25 | 31.25 | 1812.50 | 50 | 34.72 | 1614.48 |
| AV. | | | | 32.81 | 51.02 |
| | | | | | 1673.97 |

Table XXVII: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 8 West Texas Paymaster

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 29.85 | 59.5 | 1776.08 | 26 | 31.65 | 52.5 | 1661.63 |
| 2 | 29.50 | 60.5 | 1784.75 | 27 | 29.50 | 56.0 | 1652.00 |
| 3 | 28.59 | 53.5 | 1583.07 | 28 | 31.15 | 56.0 | 1744.40 |
| 4 | 30.77 | 56.0 | 1723.12 | 29 | 32.36 | 49.5 | 1601.82 |
| 5 | 29.76 | 63.6 | 1889.76 | 30 | 29.67 | 54.5 | 1617.02 |
| 6 | 29.67 | 61.5 | 1824.70 | 31 | 30.49 | 54.5 | 1661.70 |
| 7 | 31.35 | 51.5 | 1614.52 | 32 | 28.49 | 59.5 | 1695.15 |
| 8 | 30.86 | 57.0 | 1759.02 | 33 | 29.15 | 56.5 | 1646.98 |
| 9 | 30.86 | 58.5 | 1805.31 | 34 | 30.12 | 53.0 | 1596.36 |
| 10 | 31.35 | 52.0 | 1645.87 | 35 | 30.77 | 57.0 | 1753.89 |
| 11 | 31.25 | 52.0 | 1625.00 | 36 | 28.57 | 58.0 | 1657.06 |
| 12 | 31.06 | 54.5 | 1692.77 | 37 | 27.40 | 66.0 | 1808.40 |
| 13 | 28.25 | 65.6 | 1793.88 | 38 | 33.11 | 56.0 | 1854.16 |
| 14 | 31.45 | 54.5 | 1714.03 | 39 | 32.68 | 54.5 | 1781.06 |
| 15 | 27.25 | 63.0 | 1716.75 | 40 | 30.30 | 56.0 | 1696.80 |
| 16 | 30.03 | 54.5 | 1636.64 | 41 | 28.57 | 58.5 | 1671.35 |
| 17 | 30.58 | 50.0 | 1529.00 | 42 | 30.67 | 55.0 | 1686.85 |
| 18 | 29.67 | 51.5 | 1528.00 | 43 | 31.25 | 55.0 | 1718.75 |
| 19 | 30.48 | 52.5 | 1605.45 | 44 | 29.94 | 52.0 | 1556.88 |
| 20 | 32.36 | 50.0 | 1618.00 | 45 | 30.77 | 50.0 | 1538.50 |
| 21 | 29.07 | 58.5 | 1700.60 | 46 | 29.24 | 62.5 | 1827.50 |
| 22 | 30.03 | 61.5 | 1846.85 | 47 | 20.12 | 57.5 | 1731.90 |
| 23 | 28.99 | 65.0 | 1884.35 | 48 | 31.45 | 59.5 | 1871.98 |
| 24 | 30.86 | 56.0 | 1728.16 | 49 | 30.40 | 55.5 | 1687.20 |
| 25 | 30.30 | 57.0 | 1727.10 | 50 | 28.99 | 53.0 | 1536.47 |
| Av. | | | | 30.24 | 56.32 | 1703.12 | |

Table XXVIII: Counts, Skein Breaking Strength, and Count-Strength Product of 32s Yarn.
Lot No. 9 Georgia Upland - 1" Mid.

| Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product |
|----------------------|-------|--|-------------------------------|----------------------|-------|--|-------------------------------|
| 1 | 29.50 | 59.5 | 1755.25 | 26 | 30.77 | 58.0 | 1784.66 |
| 2 | 29.41 | 56.0 | 1646.96 | 27 | 30.30 | 56.0 | 1696.80 |
| 3 | 31.55 | 54.5 | 1719.48 | 28 | 30.96 | 55.0 | 1702.80 |
| 4 | 30.77 | 56.0 | 1723.12 | 29 | 32.47 | 46.5 | 1509.86 |
| 5 | 27.30 | 61.5 | 1722.62 | 30 | 29.34 | 58.5 | 1710.54 |
| 6 | 29.15 | 59.0 | 1719.85 | 31 | 30.86 | 51.5 | 1589.29 |
| 7 | 31.15 | 53.0 | 1650.95 | 32 | 32.15 | 49.0 | 1575.35 |
| 8 | 29.41 | 58.0 | 1705.78 | 33 | 31.85 | 52.5 | 1672.12 |
| 9 | 27.93 | 62.0 | 1731.66 | 34 | 30.49 | 57.5 | 1753.18 |
| 10 | 31.45 | 56.0 | 1761.20 | 35 | 30.30 | 51.5 | 1560.45 |
| 11 | 30.49 | 49.5 | 1509.25 | 36 | 31.55 | 50.0 | 1577.50 |
| 12 | 29.85 | 61.0 | 1820.85 | 37 | 31.35 | 53.5 | 1677.22 |
| 13 | 30.58 | 56.0 | 1712.48 | 38 | 29.41 | 61.5 | 1808.72 |
| 14 | 29.41 | 63.5 | 1867.54 | 39 | 30.49 | 58.0 | 1768.42 |
| 15 | 31.35 | 51.5 | 1614.52 | 40 | 29.76 | 55.0 | 1636.80 |
| 16 | 29.59 | 60.0 | 1775.40 | 41 | 31.65 | 52.5 | 1661.63 |
| 17 | 30.77 | 52.5 | 1615.43 | 42 | 31.06 | 60.5 | 1879.13 |
| 18 | 29.85 | 57.5 | 1716.38 | 43 | 29.33 | 58.5 | 1719.80 |
| 19 | 33.78 | 49.0 | 1655.22 | 44 | 30.30 | 57.5 | 1742.25 |
| 20 | 31.06 | 54.0 | 1677.24 | 45 | 32.26 | 53.5 | 1725.91 |
| 21 | 31.74 | 51.0 | 1623.84 | 46 | 29.85 | 58.5 | 1746.22 |
| 22 | 31.45 | 54.0 | 1698.30 | 47 | 31.55 | 53.5 | 1687.93 |
| 23 | 32.79 | 48.0 | 1573.92 | 48 | 32.05 | 51.0 | 1634.55 |
| 24 | 31.35 | 52.5 | 1645.88 | 49 | 33.30 | 53.5 | 1621.05 |
| 25 | 31.25 | 50.5 | 1578.12 | 50 | 29.94 | 54.5 | 1631.73 |
| Av. | | | | 30.68 | 55.07 | 1689.55 | |

Table XXIX: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 1 Stoneville 2B.

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 36.36 | 42.0 | 1527.12 | 26 | 36.36 | 41.0 | 1490.76 |
| 2 | 36.36 | 45.0 | 1636.20 | 27 | 37.04 | 42.5 | 1574.20 |
| 3 | 35.71 | 43.5 | 1553.39 | 28 | 36.50 | 42.5 | 1568.25 |
| 4 | 35.46 | 43.5 | 1542.51 | 29 | 35.46 | 42.0 | 1489.32 |
| 5 | 35.97 | 42.0 | 1510.74 | 30 | 38.61 | 41.5 | 1602.32 |
| 6 | 35.71 | 52.5 | 1874.77 | 31 | 35.59 | 40.0 | 1423.60 |
| 7 | 34.13 | 48.0 | 1638.24 | 32 | 37.31 | 41.0 | 1529.71 |
| 8 | 34.36 | 42.5 | 1460.30 | 33 | 35.84 | 41.0 | 1469.44 |
| 9 | 33.67 | 44.0 | 1481.84 | 34 | 35.71 | 47.0 | 1678.37 |
| 10 | 36.63 | 43.5 | 1583.40 | 35 | 35.59 | 42.5 | 1512.58 |
| 11 | 34.48 | 48.0 | 1655.05 | 36 | 33.78 | 52.5 | 1775.45 |
| 12 | 34.36 | 44.5 | 1529.02 | 37 | 36.63 | 41.5 | 1320.14 |
| 13 | 35.09 | 43.0 | 1508.87 | 38 | 34.36 | 42.5 | 1460.30 |
| 14 | 35.09 | 44.5 | 1561.51 | 39 | 32.26 | 49.5 | 1596.87 |
| 15 | 34.48 | 43.5 | 1499.88 | 40 | 37.45 | 40.5 | 1516.72 |
| 16 | 32.57 | 48.5 | 1579.65 | 41 | 36.90 | 45.5 | 1678.95 |
| 17 | 35.34 | 45.5 | 1607.97 | 42 | 32.89 | 47.5 | 1562.27 |
| 18 | 35.21 | 43.0 | 1514.03 | 43 | 35.46 | 43.5 | 1542.51 |
| 19 | 34.84 | 45.0 | 1567.80 | 44 | 35.21 | 42.0 | 1478.82 |
| 20 | 38.31 | 36.0 | 1379.16 | 45 | 37.31 | 41.0 | 1529.71 |
| 21 | 34.60 | 40.0 | 1384.00 | 46 | 33.00 | 48.5 | 1600.50 |
| 22 | 36.36 | 41.5 | 1508.94 | 47 | 33.00 | 40.5 | 1336.50 |
| 23 | 36.50 | 41.0 | 1496.50 | 48 | 35.97 | 46.0 | 1654.62 |
| 24 | 37.17 | 43.5 | 1616.90 | 49 | 35.84 | 42.5 | 1523.20 |
| 25 | 34.97 | 43.5 | 1521.19 | 50 | 34.97 | 46.0 | 1608.62 |
| Av. | | | | 35.46 | 43.76 | 1551.73 | |

Table XXX: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 2 D & P L - 11A.

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 37.88 | 32.5 | 1231.10 | 26 | 36.23 | 36.0 | 1304.28 |
| 2 | 37.04 | 37.0 | 1370.48 | 27 | 34.60 | 44.5 | 1539.70 |
| 3 | 38.61 | 38.0 | 1467.18 | 28 | 36.50 | 37.0 | 1350.50 |
| 4 | 34.13 | 40.0 | 1365.20 | 29 | 36.76 | 35.0 | 1286.60 |
| 5 | 36.50 | 39.5 | 1441.75 | 30 | 34.25 | 40.0 | 1370.00 |
| 6 | 35.71 | 35.0 | 1249.85 | 31 | 35.46 | 37.0 | 1312.02 |
| 7 | 36.76 | 35.0 | 1286.60 | 32 | 36.76 | 38.0 | 1396.88 |
| 8 | 35.84 | 46.5 | 1666.56 | 33 | 37.04 | 33.0 | 1222.32 |
| 9 | 36.10 | 37.0 | 1335.70 | 34 | 34.60 | 42.5 | 1470.50 |
| 10 | 35.97 | 37.5 | 1348.88 | 35 | 35.21 | 40.0 | 1408.40 |
| 11 | 36.76 | 39.0 | 1433.64 | 36 | 37.50 | 36.0 | 1353.24 |
| 12 | 34.13 | 41.5 | 1416.40 | 37 | 36.76 | 39.5 | 1452.02 |
| 13 | 35.71 | 39.0 | 1392.69 | 38 | 33.78 | 38.0 | 1283.64 |
| 14 | 36.63 | 42.5 | 1556.77 | 39 | 38.91 | 34.5 | 1342.40 |
| 15 | 36.63 | 35.0 | 1282.05 | 40 | 34.48 | 43.5 | 1499.88 |
| 16 | 36.63 | 35.0 | 1282.05 | 41 | 34.97 | 38.0 | 1328.86 |
| 17 | 36.36 | 34.0 | 1236.24 | 42 | 37.04 | 35.0 | 1296.40 |
| 18 | 33.33 | 44.0 | 1466.52 | 43 | 37.84 | 37.0 | 1370.48 |
| 19 | 39.22 | 33.0 | 1294.26 | 44 | 34.60 | 39.0 | 1349.40 |
| 20 | 35.46 | 41.0 | 1452.86 | 45 | 36.36 | 38.5 | 1399.86 |
| 21 | 33.33 | 43.5 | 1449.85 | 46 | 36.63 | 41.0 | 1501.63 |
| 22 | 34.48 | 42.0 | 1448.16 | 47 | 34.97 | 41.5 | 1451.25 |
| 23 | 34.48 | 38.0 | 1310.24 | 48 | 34.01 | 39.0 | 1326.39 |
| 24 | 35.97 | 37.0 | 1329.04 | 49 | 34.84 | 42.5 | 1480.70 |
| 25 | 33.22 | 44.0 | 1461.86 | 50 | 35.46 | 41.0 | 1458.86 |

Av. 35.90 38.68 1388.61

Table XXXI: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 3 Dixie Triumph 8.

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 39.37 | 34.5 | 1358.26 | 26 | 37.31 | 38.0 | 1417.78 |
| 2 | 40.49 | 35.0 | 1417.15 | 27 | 38.02 | 37.5 | 1425.75 |
| 3 | 37.02 | 37.5 | 1389.00 | 28 | 39.53 | 37.0 | 1462.61 |
| 4 | 39.53 | 38.0 | 1502.14 | 29 | 36.63 | 39.5 | 1446.88 |
| 5 | 38.17 | 40.5 | 1545.88 | 30 | 38.46 | 36.5 | 1403.79 |
| 6 | 35.71 | 44.5 | 1589.10 | 31 | 40.16 | 32.5 | 1305.20 |
| 7 | 37.88 | 35.5 | 1344.74 | 32 | 39.68 | 35.0 | 1388.80 |
| 8 | 36.63 | 39.5 | 1446.89 | 33 | 39.68 | 38.0 | 1507.84 |
| 9 | 37.88 | 39.0 | 1477.32 | 34 | 39.84 | 37.5 | 1494.00 |
| 10 | 39.84 | 37.5 | 1494.00 | 35 | 36.36 | 44.5 | 1618.02 |
| 11 | 41.32 | 35.0 | 1464.20 | 36 | 40.82 | 37.0 | 1510.34 |
| 12 | 41.67 | 32.0 | 1333.44 | 37 | 38.22 | 38.0 | 1490.36 |
| 13 | 37.88 | 44.0 | 1666.72 | 38 | 39.06 | 42.0 | 1640.52 |
| 14 | 38.46 | 36.5 | 1403.79 | 39 | 37.31 | 40.0 | 1492.40 |
| 15 | 40.16 | 34.5 | 1385.52 | 40 | 38.31 | 39.0 | 1494.09 |
| 16 | 38.17 | 38.5 | 1469.54 | 41 | 37.59 | 43.0 | 1616.37 |
| 17 | 37.04 | 43.0 | 1592.72 | 42 | 39.53 | 34.5 | 1363.78 |
| 18 | 37.74 | 40.0 | 1509.60 | 43 | 38.02 | 40.0 | 1520.80 |
| 19 | 38.61 | 49.0 | 1544.40 | 44 | 37.31 | 40.0 | 1492.40 |
| 20 | 36.63 | 42.5 | 1556.70 | 45 | 37.04 | 42.5 | 1574.20 |
| 21 | 37.17 | 42.0 | 1561.14 | 46 | 36.90 | 39.0 | 1439.10 |
| 22 | 36.36 | 41.0 | 1490.76 | 47 | 38.91 | 38.0 | 1478.58 |
| 23 | 39.37 | 38.0 | 1496.06 | 48 | 37.74 | 40.0 | 1509.60 |
| 24 | 36.90 | 42.0 | 1549.80 | 49 | 36.90 | 41.5 | 1531.35 |
| 25 | 38.91 | 40.0 | 1556.40 | 50 | 37.34 | 40.0 | 1493.60 |
| Av. | | | | 38.33 | 38.62 | 1480.30 | |

Table XXXII: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 4 Deltapine 12B.

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 36.77 | 40.0 | 1470.80 | 26 | 37.31 | 40.0 | 1492.40 |
| 2 | 35.34 | 41.0 | 1454.94 | 27 | 38.46 | 42.5 | 1634.55 |
| 3 | 34.72 | 46.0 | 1597.12 | 28 | 37.31 | 40.0 | 1492.40 |
| 4 | 35.34 | 43.0 | 1519.62 | 29 | 35.84 | 40.5 | 1451.52 |
| 5 | 37.31 | 35.0 | 1305.85 | 30 | 37.88 | 41.0 | 1553.08 |
| 6 | 35.09 | 46.5 | 1386.05 | 31 | 33.33 | 44.5 | 1483.18 |
| 7 | 34.25 | 43.5 | 1489.88 | 32 | 36.23 | 40.0 | 1449.20 |
| 8 | 35.46 | 42.5 | 1507.05 | 33 | 37.45 | 42.5 | 1591.63 |
| 9 | 37.45 | 40.0 | 1498.00 | 34 | 38.46 | 38.0 | 1461.48 |
| 10 | 34.97 | 44.5 | 1556.16 | 35 | 34.48 | 44.0 | 1517.12 |
| 11 | 35.71 | 39.5 | 1410.54 | 36 | 36.50 | 38.5 | 1405.25 |
| 12 | 35.84 | 41.0 | 1469.44 | 37 | 36.23 | 40.0 | 1449.20 |
| 13 | 34.97 | 40.0 | 1398.80 | 38 | 38.76 | 40.0 | 1550.40 |
| 14 | 36.36 | 42.0 | 1527.12 | 39 | 35.59 | 40.5 | 1441.40 |
| 15 | 38.02 | 40.0 | 1520.80 | 40 | 36.77 | 42.5 | 1562.72 |
| 16 | 37.74 | 41.5 | 1566.21 | 41 | 38.91 | 40.5 | 1575.85 |
| 17 | 37.45 | 41.0 | 1535.45 | 42 | 36.50 | 38.0 | 1387.00 |
| 18 | 36.50 | 40.5 | 1478.25 | 43 | 35.59 | 44.0 | 1565.96 |
| 19 | 37.74 | 42.5 | 1603.95 | 44 | 38.31 | 38.0 | 1455.78 |
| 20 | 36.23 | 45.5 | 1648.47 | 45 | 34.97 | 44.5 | 1557.17 |
| 21 | 36.90 | 37.5 | 1383.75 | 46 | 38.17 | 42.0 | 1603.14 |
| 22 | 36.77 | 41.0 | 1507.57 | 47 | 37.88 | 46.0 | 1742.48 |
| 23 | 40.00 | 37.5 | 1500.00 | 48 | 35.59 | 45.0 | 1600.55 |
| 24 | 37.88 | 40.5 | 1534.14 | 49 | 35.09 | 45.0 | 1579.05 |
| 25 | 36.63 | 40.0 | 1465.20 | 50 | 37.45 | 42.0 | 1572.90 |

Av. 36.41 41.39 1507.01

Table XXXIII: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 5 Wanamaker-W.R. Cleveland Sta. 4.

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 37.31 | 43.0 | 1604.33 | 26 | 36.36 | 46.5 | 1690.74 |
| 2 | 38.02 | 43.0 | 1634.86 | 27 | 40.39 | 39.0 | 1579.11 |
| 3 | 36.36 | 43.0 | 1563.48 | 28 | 33.33 | 50.0 | 1666.50 |
| 4 | 38.61 | 47.0 | 1814.67 | 29 | 37.59 | 42.5 | 1597.58 |
| 5 | 37.74 | 43.0 | 1622.82 | 30 | 40.32 | 40.0 | 1612.80 |
| 6 | 37.74 | 42.0 | 1585.08 | 31 | 37.31 | 45.5 | 1697.60 |
| 7 | 35.71 | 50.5 | 1803.35 | 32 | 40.98 | 40.5 | 1659.69 |
| 8 | 37.88 | 41.0 | 1553.08 | 33 | 35.71 | 48.5 | 1731.94 |
| 9 | 38.61 | 42.0 | 1621.62 | 34 | 39.22 | 41.0 | 1526.06 |
| 10 | 35.97 | 42.0 | 1510.74 | 35 | 37.88 | 45.5 | 1723.54 |
| 11 | 36.90 | 48.5 | 1789.65 | 36 | 40.65 | 40.0 | 1626.00 |
| 12 | 36.76 | 40.0 | 1470.40 | 37 | 36.90 | 45.0 | 1660.50 |
| 13 | 36.76 | 43.5 | 1599.06 | 38 | 38.46 | 43.0 | 1653.78 |
| 14 | 36.10 | 45.0 | 1624.50 | 39 | 37.17 | 37.5 | 1393.88 |
| 15 | 37.74 | 43.5 | 1641.69 | 40 | 35.09 | 46.0 | 1614.14 |
| 16 | 38.46 | 41.0 | 1576.86 | 41 | 38.61 | 41.5 | 1602.31 |
| 17 | 37.88 | 41.0 | 1553.08 | 42 | 34.84 | 47.5 | 1654.90 |
| 18 | 38.02 | 42.0 | 1596.84 | 43 | 38.02 | 41.0 | 1558.82 |
| 19 | 37.88 | 40.0 | 1515.20 | 44 | 35.46 | 43.0 | 1524.78 |
| 20 | 37.04 | 42.0 | 1565.08 | 45 | 38.17 | 43.5 | 1660.40 |
| 21 | 37.31 | 41.5 | 1548.36 | 46 | 35.46 | 44.5 | 1577.97 |
| 22 | 37.56 | 39.0 | 1464.84 | 47 | 36.90 | 44.5 | 1642.05 |
| 23 | 36.64 | 42.5 | 1603.95 | 48 | 36.90 | 45.5 | 1678.95 |
| 24 | 35.97 | 46.0 | 1654.62 | 49 | 37.88 | 40.0 | 1515.20 |
| 25 | 35.97 | 47.5 | 1708.58 | 50 | 39.22 | 41.0 | 1608.02 |

-Av. 37.42 43.24 1618.04

Table XXXIV: Counts, Skein Breaking Strength, and Count-
Strength Product of 36s Yarn.
Lot No. 6 Coker's 4 in 1.

| Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product |
|----------------------|-------|--|-------------------------------|----------------------|-------|--|-------------------------------|
| 1 | 37.45 | 44.5 | 1666.52 | 26 | 35.59 | 38.0 | 1352.42 |
| 2 | 36.36 | 41.5 | 1508.95 | 27 | 34.94 | 44.0 | 1537.36 |
| 3 | 34.00 | 44.5 | 1513.00 | 28 | 34.01 | 47.5 | 1615.48 |
| 4 | 34.13 | 43.0 | 1467.59 | 29 | 33.78 | 46.5 | 1570.77 |
| 5 | 34.25 | 46.5 | 1592.63 | 30 | 35.21 | 47.5 | 1672.48 |
| 6 | 34.43 | 44.5 | 1518.78 | 31 | 34.13 | 46.0 | 1569.98 |
| 7 | 34.97 | 43.5 | 1521.20 | 32 | 34.01 | 42.5 | 1445.42 |
| 8 | 34.84 | 44.5 | 1550.38 | 33 | 24.01 | 45.5 | 1547.45 |
| 9 | 35.34 | 45.5 | 1607.97 | 34 | 35.46 | 40.5 | 1436.14 |
| 10 | 33.78 | 53.0 | 1790.34 | 35 | 33.90 | 45.5 | 1542.45 |
| 11 | 34.97 | 42.0 | 1468.74 | 36 | 36.10 | 42.5 | 1534.25 |
| 12 | 36.23 | 45.5 | 1648.47 | 37 | 36.63 | 38.5 | 1410.23 |
| 13 | 32.16 | 50.5 | 1624.08 | 38 | 34.25 | 46.0 | 1575.50 |
| 14 | 33.33 | 43.0 | 1433.19 | 39 | 35.34 | 45.0 | 1590.30 |
| 15 | 33.78 | 44.5 | 1503.21 | 40 | 31.75 | 48.0 | 1524.00 |
| 16 | 31.06 | 52.0 | 1615.12 | 41 | 34.36 | 46.5 | 1597.74 |
| 17 | 34.01 | 50.0 | 1700.50 | 42 | 35.71 | 42.0 | 1499.82 |
| 18 | 33.00 | 48.0 | 1584.00 | 43 | 32.47 | 44.5 | 1444.91 |
| 19 | 33.11 | 47.0 | 1556.17 | 44 | 31.25 | 47.0 | 1468.75 |
| 20 | 33.78 | 47.0 | 1587.66 | 45 | 34.84 | 43.0 | 1498.12 |
| 21 | 35.84 | 39.0 | 1397.76 | 46 | 35.34 | 47.5 | 1678.65 |
| 22 | 32.05 | 48.0 | 1538.40 | 47 | 33.90 | 43.5 | 1474.65 |
| 23 | 35.59 | 42.0 | 1494.78 | 48 | 34.60 | 44.0 | 1522.40 |
| 24 | 34.84 | 48.0 | 1672.32 | 49 | 35.71 | 43.5 | 1553.39 |
| 25 | 34.84 | 50.0 | 1742.00 | 50 | 35.21 | 42.0 | 1478.82 |
| Av. | | | | 34.41 | 45.09 | 1551.55 | |

Table XXXV: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 7 Coker's Clevewilt #7.

| Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Specimen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|--------------|-------|-----------------------------------|------------------------|--------------|-------|-----------------------------------|------------------------|
| 1 | 34.84 | 45.0 | 1567.80 | 26 | 37.04 | 43.0 | 1592.72 |
| 2 | 37.17 | 42.5 | 1579.72 | 27 | 35.21 | 44.0 | 1549.24 |
| 3 | 37.31 | 40.0 | 1492.40 | 28 | 38.61 | 40.0 | 1544.40 |
| 4 | 39.06 | 40.0 | 1562.40 | 29 | 39.53 | 38.0 | 1502.14 |
| 5 | 36.23 | 43.0 | 1557.89 | 30 | 36.90 | 44.5 | 1642.05 |
| 6 | 36.10 | 45.5 | 1642.55 | 31 | 37.04 | 44.5 | 1642.48 |
| 7 | 39.37 | 39.5 | 1555.12 | 32 | 37.74 | 40.5 | 1528.47 |
| 8 | 34.48 | 44.0 | 1517.12 | 33 | 38.76 | 40.0 | 1549.20 |
| 9 | 37.74 | 38.0 | 1434.12 | 34 | 35.59 | 46.5 | 1654.93 |
| 10 | 34.48 | 45.0 | 1551.60 | 35 | 37.59 | 43.0 | 1616.37 |
| 11 | 40.00 | 39.5 | 1580.00 | 36 | 37.04 | 41.0 | 1518.64 |
| 12 | 38.91 | 37.5 | 1459.12 | 37 | 36.50 | 43.5 | 1587.75 |
| 13 | 35.84 | 42.0 | 1505.28 | 38 | 37.74 | 41.5 | 1566.21 |
| 14 | 34.84 | 43.0 | 1498.12 | 39 | 36.63 | 45.0 | 1648.35 |
| 15 | 37.74 | 43.5 | 1641.69 | 40 | 37.04 | 44.0 | 1629.76 |
| 16 | 38.31 | 38.0 | 1455.78 | 41 | 34.60 | 48.5 | 1678.10 |
| 17 | 37.88 | 35.0 | 1325.80 | 42 | 39.06 | 37.5 | 1464.75 |
| 18 | 37.40 | 45.0 | 1683.00 | 43 | 38.61 | 40.5 | 1563.70 |
| 19 | 39.06 | 40.0 | 1562.40 | 44 | 38.91 | 41.5 | 1614.76 |
| 20 | 39.53 | 37.0 | 1462.61 | 45 | 35.59 | 45.5 | 1619.35 |
| 21 | 34.48 | 45.0 | 1551.60 | 46 | 36.63 | 41.5 | 1520.15 |
| 22 | 40.16 | 40.0 | 1606.40 | 47 | 40.16 | 40.0 | 1606.40 |
| 23 | 37.45 | 38.0 | 1423.10 | 48 | 38.91 | 41.0 | 1595.31 |
| 24 | 40.16 | 38.0 | 1526.08 | 49 | 38.76 | 44.0 | 1705.44 |
| 25 | 37.17 | 40.5 | 1505.39 | 50 | 37.74 | 43.0 | 1622.82 |

-Av. 37.47 41.73 1563.62

Table XXXVI: Counts, Skein Breaking Strength, and Count-Strength Product of 36s Yarn.
Lot No. 8 West Texas paymaster.

| Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product | Spec- imen No. | Count | Skein Breaking Strength (in lbs.) | Count- Strength Product |
|----------------------|-------|--|-------------------------------|----------------------|-------|--|-------------------------------|
| 1 | 34.48 | 45.0 | 1551.60 | 26 | 32.16 | 45.0 | 1447.20 |
| 2 | 36.23 | 43.5 | 1576.00 | 27 | 33.00 | 48.5 | 1600.50 |
| 3 | 40.32 | 40.0 | 1612.80 | 28 | 32.79 | 46.5 | 1524.74 |
| 4 | 32.79 | 52.0 | 1705.08 | 29 | 32.05 | 46.5 | 1490.33 |
| 5 | 34.43 | 45.0 | 1535.85 | 30 | 34.72 | 44.5 | 1545.04 |
| 6 | 32.68 | 45.5 | 1486.94 | 31 | 36.36 | 41.5 | 1508.94 |
| 7 | 34.97 | 42.5 | 1486.22 | 32 | 34.36 | 48.5 | 1666.46 |
| 8 | 33.78 | 49.5 | 1672.11 | 33 | 35.21 | 45.5 | 1602.06 |
| 9 | 31.75 | 42.5 | 1349.38 | 34 | 34.36 | 45.5 | 1563.38 |
| 10 | 13.45 | 49.5 | 1556.77 | 35 | 36.90 | 42.5 | 1568.25 |
| 11 | 33.33 | 41.5 | 1383.19 | 36 | 35.09 | 45.5 | 1596.60 |
| 12 | 33.22 | 46.5 | 1544.73 | 37 | 34.25 | 42.5 | 1455.62 |
| 13 | 33.78 | 42.5 | 1435.65 | 38 | 34.72 | 42.5 | 1475.60 |
| 14 | 34.25 | 41.5 | 1421.37 | 39 | 35.34 | 45.5 | 1607.97 |
| 15 | 37.74 | 40.5 | 1528.47 | 40 | 35.21 | 42.5 | 1496.43 |
| 16 | 33.78 | 45.5 | 1536.99 | 41 | 33.78 | 43.5 | 1469.43 |
| 17 | 34.25 | 44.5 | 1524.13 | 42 | 34.25 | 42.5 | 1455.62 |
| 18 | 35.46 | 40.5 | 1436.13 | 43 | 34.72 | 41.5 | 1440.88 |
| 19 | 35.46 | 46.5 | 1648.89 | 44 | 34.25 | 44.5 | 1524.13 |
| 20 | 35.84 | 45.5 | 1613.43 | 45 | 33.78 | 45.0 | 1520.10 |
| 21 | 32.26 | 45.5 | 1467.83 | 46 | 35.97 | 44.5 | 1600.66 |
| 22 | 31.95 | 49.5 | 1581.52 | 47 | 35.84 | 42.5 | 1523.20 |
| 23 | 33.67 | 44.5 | 1498.32 | 48 | 34.84 | 41.5 | 1445.86 |
| 24 | 34.13 | 47.5 | 1621.17 | 49 | 34.97 | 41.5 | 1451.25 |
| 25 | 32.78 | 44.0 | 1486.32 | 50 | 34.72 | 43.5 | 1510.32 |
| Av. | | | | 34.38 | 44.49 | 1529.57 | |

Table XXXVII: Counts, Skein Breaking Strength, and Count-
Strength Product of 36s Yarn.
Lot No. 9 Georgia Upland - 1st Mid.

| Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product | Spec-imen No. | Count | Skein Breaking Strength (in lbs.) | Count-Strength Product |
|---------------|-------|-----------------------------------|------------------------|---------------|-------|-----------------------------------|------------------------|
| 1 | 38.02 | 40.5 | 1539.81 | 26 | 36.63 | 43.0 | 1575.09 |
| 2 | 34.25 | 52.0 | 1781.00 | 27 | 33.56 | 48.5 | 1627.66 |
| 3 | 34.36 | 45.5 | 1563.38 | 28 | 37.04 | 42.0 | 1555.68 |
| 4 | 38.17 | 43.0 | 1641.31 | 29 | 35.59 | 45.5 | 1618.35 |
| 5 | 38.76 | 40.5 | 1569.78 | 30 | 37.31 | 43.0 | 1604.33 |
| 6 | 35.34 | 46.0 | 1625.64 | 31 | 39.79 | 30.0 | 1639.50 |
| 7 | 34.84 | 45.0 | 1567.80 | 32 | 36.77 | 40.0 | 1470.80 |
| 8 | 38.76 | 42.0 | 1627.92 | 33 | 37.31 | 44.0 | 1641.64 |
| 9 | 35.21 | 42.0 | 1478.82 | 34 | 35.84 | 45.5 | 1630.72 |
| 10 | 32.36 | 50.0 | 1618.00 | 35 | 34.60 | 43.5 | 1505.10 |
| 11 | 35.34 | 45.0 | 1590.30 | 36 | 33.23 | 47.0 | 1702.81 |
| 12 | 38.02 | 41.0 | 1558.82 | 37 | 35.97 | 43.5 | 1564.70 |
| 13 | 38.17 | 42.0 | 1603.14 | 38 | 35.09 | 43.5 | 1526.41 |
| 14 | 32.33 | 47.0 | 1566.51 | 39 | 33.10 | 43.5 | 1570.35 |
| 15 | 35.34 | 43.0 | 1519.62 | 40 | 33.90 | 48.0 | 1771.20 |
| 16 | 36.50 | 48.5 | 1770.25 | 41 | 37.04 | 38.0 | 1407.52 |
| 17 | 34.97 | 44.5 | 1556.16 | 42 | 35.09 | 43.0 | 1508.87 |
| 18 | 35.46 | 41.0 | 1453.86 | 43 | 35.21 | 43.0 | 1690.08 |
| 19 | 35.59 | 44.5 | 1583.75 | 44 | 34.97 | 43.0 | 1678.56 |
| 20 | 34.36 | 48.0 | 1649.28 | 45 | 39.06 | 42.5 | 1660.05 |
| 21 | 34.60 | 47.0 | 1626.20 | 46 | 36.50 | 42.0 | 1533.00 |
| 22 | 36.23 | 42.0 | 1521.66 | 47 | 35.09 | 46.0 | 1614.14 |
| 23 | 36.50 | 43.5 | 1587.75 | 48 | 36.90 | 47.0 | 1734.30 |
| 24 | 35.46 | 46.0 | 1631.16 | 49 | 36.63 | 46.0 | 1684.98 |
| 25 | 36.50 | 40.5 | 1478.25 | 50 | 38.17 | 43.0 | 1641.31 |
| Av. | | | | | | | |

Av. 35.98 44.48 1600.39

Table XXXVIII: Single Strand Breaking Strength of 22s Yarn.
Lot No. 1 Stoneville 2B.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 325 | 26 | 465 |
| 2 | 345 | 27 | 370 |
| 3 | 380 | 28 | 435 |
| 4 | 420 | 29 | 325 |
| 5 | 370 | 30 | 455 |
| 6 | 310 | 31 | 385 |
| 7 | 320 | 32 | 420 |
| 8 | 330 | 33 | 440 |
| 9 | 355 | 34 | 365 |
| 10 | 350 | 35 | 475 |
| 11 | 310 | 36 | 460 |
| 12 | 320 | 37 | 435 |
| 13 | 260 | 38 | 410 |
| 14 | 305 | 39 | 440 |
| 15 | 295 | 40 | 420 |
| 16 | 330 | 41 | 415 |
| 17 | 355 | 42 | 425 |
| 18 | 325 | 43 | 470 |
| 19 | 325 | 44 | 390 |
| 20 | 390 | 45 | 425 |
| 21 | 455 | 46 | 420 |
| 22 | 305 | 47 | 420 |
| 23 | 400 | 48 | 405 |
| 24 | 390 | 49 | 390 |
| 25 | 375 | 50 | 400 |
| Average | | 382.9 | |

Table XXXIX: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 2 D & P L - 11A.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 370 | 26 | 265 |
| 2 | 340 | 27 | 260 |
| 3 | 320 | 28 | 265 |
| 4 | 295 | 29 | 320 |
| 5 | 285 | 30 | 300 |
| 6 | 350 | 31 | 280 |
| 7 | 375 | 32 | 290 |
| 8 | 290 | 33 | 310 |
| 9 | 305 | 34 | 320 |
| 10 | 320 | 35 | 335 |
| 11 | 275 | 36 | 330 |
| 12 | 305 | 37 | 355 |
| 13 | 305 | 38 | 320 |
| 14 | 300 | 39 | 385 |
| 15 | 345 | 40 | 360 |
| 16 | 305 | 41 | 290 |
| 17 | 310 | 42 | 305 |
| 18 | 335 | 43 | 280 |
| 19 | 280 | 44 | 310 |
| 20 | 360 | 45 | 350 |
| 21 | 305 | 46 | 320 |
| 22 | 370 | 47 | 290 |
| 23 | 375 | 48 | 320 |
| 24 | 290 | 49 | 345 |
| 25 | 305 | 50 | 355 |
| Average | | 317.5 | |

Table XL: Single Strand Breaking Strength of 22s Yarn.
Lot No. 3 Dixie Triumph 8.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 315 | 36 | 335 |
| 2 | 305 | 37 | 345 |
| 3 | 375 | 38 | 345 |
| 4 | 305 | 39 | 345 |
| 5 | 305 | 40 | 280 |
| 6 | 290 | 41 | 285 |
| 7 | 335 | 42 | 305 |
| 8 | 340 | 43 | 315 |
| 9 | 280 | 44 | 305 |
| 10 | 320 | 45 | 300 |
| 11 | 305 | 46 | 305 |
| 12 | 325 | 47 | 340 |
| 13 | 305 | 48 | 285 |
| 14 | 340 | 49 | 320 |
| 15 | 340 | 50 | 290 |
| 16 | 330 | | 290 |
| 17 | 320 | | 280 |
| 18 | 350 | | 305 |
| 19 | 280 | | 280 |
| 20 | 340 | | 300 |
| 21 | 320 | | 280 |
| 22 | 345 | | 290 |
| 23 | 310 | | 280 |
| 24 | 315 | | 290 |
| 25 | 300 | | 305 |
| | | . Average | 312.4 |

Table XLI: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 4 Deltapine 12B.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 340 | 26 | 345 |
| 2 | 370 | 27 | 360 |
| 3 | 320 | 28 | 360 |
| 4 | 330 | 29 | 365 |
| 5 | 355 | 30 | 365 |
| 6 | 300 | 31 | 340 |
| 7 | 355 | 32 | 300 |
| 8 | 345 | 33 | 330 |
| 9 | 330 | 34 | 335 |
| 10 | 345 | 35 | 310 |
| 11 | 335 | 36 | 350 |
| 12 | 285 | 37 | 265 |
| 13 | 315 | 38 | 315 |
| 14 | 315 | 39 | 315 |
| 15 | 290 | 40 | 305 |
| 16 | 285 | 41 | 300 |
| 17 | 280 | 42 | 305 |
| 18 | 285 | 43 | 350 |
| 19 | 230 | 44 | 345 |
| 20 | 245 | 45 | 280 |
| 21 | 285 | 46 | 365 |
| 22 | 270 | 47 | 345 |
| 23 | 340 | 48 | 340 |
| 24 | 315 | 49 | 330 |
| 25 | 315 | 50 | 355 |
| Average | | 326.0 | |

Table XLII: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 5 Wanamaker-W. R. Cleveland Sta. 4.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 290 | 26 | 390 |
| 2 | 350 | 27 | 400 |
| 3 | 330 | 28 | 365 |
| 4 | 335 | 29 | 390 |
| 5 | 385 | 30 | 385 |
| 6 | 355 | 31 | 360 |
| 7 | 365 | 32 | 410 |
| 8 | 390 | 33 | 400 |
| 9 | 385 | 34 | 390 |
| 10 | 375 | 35 | 350 |
| 11 | 320 | 36 | 385 |
| 12 | 385 | 37 | 340 |
| 13 | 370 | 38 | 380 |
| 14 | 320 | 39 | 385 |
| 15 | 375 | 40 | 340 |
| 16 | 375 | 41 | 335 |
| 17 | 355 | 42 | 340 |
| 18 | 390 | 43 | 410 |
| 19 | 385 | 44 | 400 |
| 20 | 320 | 45 | 415 |
| 21 | 370 | 46 | 375 |
| 22 | 345 | 47 | 330 |
| 23 | 345 | 48 | 370 |
| 24 | 390 | 49 | 390 |
| 25 | 320 | 50 | 365 |

Average 366.8

Table XLIII: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 6 Coker's 4 in 1.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 390 | 26 | 330 |
| 2 | 360 | 27 | 320 |
| 3 | 375 | 28 | 320 |
| 4 | 410 | 29 | 350 |
| 5 | 380 | 30 | 345 |
| 6 | 445 | 31 | 340 |
| 7 | 435 | 32 | 345 |
| 8 | 425 | 33 | 370 |
| 9 | 435 | 34 | 415 |
| 10 | 410 | 35 | 365 |
| 11 | 440 | 36 | 385 |
| 12 | 450 | 37 | 355 |
| 13 | 400 | 38 | 360 |
| 14 | 360 | 39 | 400 |
| 15 | 415 | 40 | 415 |
| 16 | 335 | 41 | 345 |
| 17 | 345 | 42 | 350 |
| 18 | 385 | 43 | 420 |
| 19 | 370 | 44 | 350 |
| 20 | 405 | 45 | 330 |
| 21 | 400 | 46 | 315 |
| 22 | 390 | 47 | 330 |
| 23 | 340 | 48 | 315 |
| 24 | 330 | 49 | 340 |
| 25 | 345 | 50 | 315 |
| Average | | 371.9 | |

Table XLIV: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 7 Coker's Clevevilt #7.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 355 | 26 | 325 |
| 2 | 380 | 27 | 385 |
| 3 | 330 | 28 | 335 |
| 4 | 325 | 29 | 340 |
| 5 | 340 | 30 | 355 |
| 6 | 305 | 31 | 255 |
| 7 | 360 | 32 | 290 |
| 8 | 310 | 33 | 225 |
| 9 | 340 | 34 | 255 |
| 10 | 355 | 35 | 290 |
| 11 | 405 | 36 | 380 |
| 12 | 355 | 37 | 405 |
| 13 | 370 | 38 | 400 |
| 14 | 315 | 39 | 390 |
| 15 | 370 | 40 | 390 |
| 16 | 335 | 41 | 405 |
| 17 | 340 | 42 | 370 |
| 18 | 370 | 43 | 370 |
| 19 | 325 | 44 | 390 |
| 20 | 355 | 45 | 400 |
| 21 | 335 | 46 | 370 |
| 22 | 315 | 47 | 365 |
| 23 | 305 | 48 | 325 |
| 24 | 325 | 49 | 310 |
| 25 | 355 | 50 | 335 |
| Average | | 343.0 | |

Table XLV: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 8 West Texas Paymaster.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 325 | 26 | 425 |
| 2 | 355 | 27 | 400 |
| 3 | 310 | 28 | 445 |
| 4 | 335 | 29 | 440 |
| 5 | 355 | 30 | 425 |
| 6 | 340 | 31 | 355 |
| 7 | 345 | 32 | 340 |
| 8 | 285 | 33 | 390 |
| 9 | 345 | 34 | 355 |
| 10 | 340 | 35 | 360 |
| 11 | 390 | 36 | 310 |
| 12 | 425 | 37 | 250 |
| 13 | 410 | 38 | 290 |
| 14 | 385 | 39 | 285 |
| 15 | 405 | 40 | 315 |
| 16 | 375 | 41 | 385 |
| 17 | 370 | 42 | 400 |
| 18 | 400 | 43 | 355 |
| 19 | 390 | 44 | 340 |
| 20 | 385 | 45 | 370 |
| 21 | 325 | 46 | 415 |
| 22 | 315 | 47 | 400 |
| 23 | 355 | 48 | 355 |
| 24 | 370 | 49 | 385 |
| 25 | 345 | 50 | 360 |
| Average | | 362.6 | |

Table XLVI: Single Strand Breaking Strength of 22s Yarn.
 Lot No. 9 Georgia Upland - 1" Mid.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 310 | 26 | 340 |
| 2 | 315 | 27 | 345 |
| 3 | 345 | 28 | 310 |
| 4 | 310 | 29 | 335 |
| 5 | 340 | 30 | 340 |
| 6 | 370 | 31 | 340 |
| 7 | 390 | 32 | 340 |
| 8 | 360 | 33 | 400 |
| 9 | 345 | 34 | 305 |
| 10 | 405 | 35 | 325 |
| 11 | 285 | 36 | 300 |
| 12 | 270 | 37 | 290 |
| 13 | 300 | 38 | 310 |
| 14 | 290 | 39 | 325 |
| 15 | 310 | 40 | 340 |
| 16 | 410 | 41 | 410 |
| 17 | 440 | 42 | 300 |
| 18 | 385 | 43 | 405 |
| 19 | 400 | 44 | 400 |
| 20 | 370 | 45 | 405 |
| 21 | 310 | 46 | 375 |
| 22 | 345 | 47 | 410 |
| 23 | 345 | 48 | 400 |
| 24 | 410 | 49 | 385 |
| 25 | 390 | 50 | 400 |
| Average | | 351.5 | |

Table XLVII: Single Strand Breaking Strength of 32s Yarn.
Lot No. 1 Stoneville 2B.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 235 | 26 | 285 |
| 2 | 230 | 27 | 285 |
| 3 | 225 | 28 | 245 |
| 4 | 205 | 29 | 255 |
| 5 | 225 | 30 | 235 |
| 6 | 215 | 31 | 240 |
| 7 | 215 | 32 | 225 |
| 8 | 200 | 33 | 235 |
| 9 | 210 | 34 | 255 |
| 10 | 230 | 35 | 245 |
| 11 | 255 | 36 | 225 |
| 12 | 235 | 37 | 245 |
| 13 | 250 | 38 | 240 |
| 14 | 230 | 39 | 250 |
| 15 | 220 | 40 | 240 |
| 16 | 245 | 41 | 295 |
| 17 | 290 | 42 | 275 |
| 18 | 215 | 43 | 310 |
| 19 | 210 | 44 | 250 |
| 20 | 220 | 45 | 285 |
| 21 | 215 | 46 | 235 |
| 22 | 240 | 47 | 205 |
| 23 | 225 | 48 | 215 |
| 24 | 230 | 49 | 205 |
| 25 | 215 | 50 | 190 |
| | | Average | 235.30 |

Table XLVIII: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 2 D & P L - 11A.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 245 | 26 | 170 |
| 2 | 240 | 27 | 175 |
| 3 | 230 | 28 | 220 |
| 4 | 255 | 29 | 190 |
| 5 | 240 | 30 | 215 |
| 6 | 260 | 31 | 210 |
| 7 | 235 | 32 | 200 |
| 8 | 200 | 33 | 190 |
| 9 | 220 | 34 | 195 |
| 10 | 195 | 35 | 175 |
| 11 | 190 | 36 | 220 |
| 12 | 180 | 37 | 190 |
| 13 | 195 | 38 | 220 |
| 14 | 175 | 39 | 210 |
| 15 | 210 | 40 | 225 |
| 16 | 180 | 41 | 175 |
| 17 | 205 | 42 | 210 |
| 18 | 200 | 43 | 195 |
| 19 | 200 | 44 | 235 |
| 20 | 210 | 45 | 215 |
| 21 | 215 | 46 | 200 |
| 22 | 195 | 47 | 225 |
| 23 | 195 | 48 | 205 |
| 24 | 190 | 49 | 215 |
| 25 | 175 | 50 | 210 |
| Average | | 206.5 | |

Table XLIX: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 3 Dixie Triumph 8.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 250 | 36 | 175 |
| 2 | 215 | 37 | 190 |
| 3 | 230 | 38 | 200 |
| 4 | 210 | 39 | 180 |
| 5 | 215 | 40 | 190 |
| 6 | 225 | 41 | 165 |
| 7 | 210 | 42 | 175 |
| 8 | 230 | 43 | 180 |
| 9 | 210 | 44 | 160 |
| 10 | 225 | 45 | 225 |
| 11 | 200 | 46 | 185 |
| 12 | 215 | 47 | 200 |
| 13 | 205 | 48 | 190 |
| 14 | 210 | 49 | 195 |
| 15 | 210 | 50 | 220 |
| 16 | 200 | | 250 |
| 17 | 195 | | 225 |
| 18 | 190 | | 220 |
| 19 | 205 | | 235 |
| 20 | 215 | | 220 |
| 21 | 215 | | 210 |
| 22 | 190 | | 205 |
| 23 | 205 | | 200 |
| 24 | 230 | | 210 |
| 25 | 200 | | 195 |
| | | Average | 206.1 |

Table L: Single Strand Breaking Strength of 32s Yarn.
Lot No. 4 Deltapine 12B.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 205 | 26 | 255 |
| 2 | 190 | 27 | 240 |
| 3 | 230 | 28 | 235 |
| 4 | 210 | 29 | 205 |
| 5 | 195 | 30 | 215 |
| 6 | 180 | 31 | 225 |
| 7 | 195 | 32 | 210 |
| 8 | 210 | 33 | 255 |
| 9 | 185 | 34 | 200 |
| 10 | 210 | 35 | 220 |
| 11 | 235 | 36 | 195 |
| 12 | 225 | 37 | 190 |
| 13 | 220 | 38 | 220 |
| 14 | 230 | 39 | 200 |
| 15 | 220 | 40 | 210 |
| 16 | 230 | 41 | 295 |
| 17 | 225 | 42 | 285 |
| 18 | 235 | 43 | 235 |
| 19 | 220 | 44 | 200 |
| 20 | 190 | 45 | 245 |
| 21 | 265 | 46 | 215 |
| 22 | 265 | 47 | 210 |
| 23 | 260 | 48 | 230 |
| 24 | 240 | 49 | 225 |
| 25 | 240 | 50 | 210 |
| | | Average | 222.3 |

Table LI: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 5 Wanamaker-W. R. Cleveland Sta. 4.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 200 | 26 | 230 |
| 2 | 160 | 27 | 240 |
| 3 | 165 | 28 | 200 |
| 4 | 175 | 29 | 215 |
| 5 | 170 | 30 | 245 |
| 6 | 235 | 31 | 195 |
| 7 | 210 | 32 | 190 |
| 8 | 220 | 33 | 210 |
| 9 | 215 | 34 | 185 |
| 10 | 240 | 35 | 195 |
| 11 | 225 | 36 | 205 |
| 12 | 235 | 37 | 315 |
| 13 | 200 | 38 | 200 |
| 14 | 225 | 39 | 200 |
| 15 | 210 | 40 | 200 |
| 16 | 205 | 41 | 220 |
| 17 | 235 | 42 | 210 |
| 18 | 200 | 43 | 205 |
| 19 | 210 | 44 | 205 |
| 20 | 220 | 45 | 210 |
| 21 | 170 | 46 | 245 |
| 22 | 185 | 47 | 195 |
| 23 | 200 | 48 | 180 |
| 24 | 200 | 49 | 185 |
| 25 | 170 | 50 | 190 |
| Average | | 207.2 | |

Table LII: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 6 Coker's 4 in 1.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 240 | 26 | 270 |
| 2 | 225 | 27 | 260 |
| 3 | 220 | 28 | 240 |
| 4 | 210 | 29 | 255 |
| 5 | 255 | 30 | 265 |
| 6 | 250 | 31 | 230 |
| 7 | 255 | 32 | 215 |
| 8 | 240 | 33 | 250 |
| 9 | 245 | 34 | 225 |
| 10 | 275 | 35 | 220 |
| 11 | 265 | 36 | 215 |
| 12 | 260 | 37 | 190 |
| 13 | 205 | 38 | 200 |
| 14 | 265 | 39 | 220 |
| 15 | 275 | 40 | 210 |
| 16 | 255 | 41 | 240 |
| 17 | 205 | 42 | 215 |
| 18 | 220 | 43 | 210 |
| 19 | 235 | 44 | 210 |
| 20 | 230 | 45 | 210 |
| 21 | 300 | 46 | 200 |
| 22 | 265 | 47 | 205 |
| 23 | 340 | 48 | 240 |
| 24 | 345 | 49 | 215 |
| 25 | 340 | 50 | 245 |
| Average | | 241.5 | |

Table LIII: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 7 Coker's Clewewilt #7.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 230 | 26 | 225 |
| 2 | 215 | 27 | 200 |
| 3 | 225 | 28 | 205 |
| 4 | 180 | 29 | 235 |
| 5 | 180 | 30 | 190 |
| 6 | 195 | 31 | 215 |
| 7 | 215 | 32 | 210 |
| 8 | 190 | 33 | 190 |
| 9 | 200 | 34 | 200 |
| 10 | 175 | 35 | 205 |
| 11 | 190 | 36 | 225 |
| 12 | 175 | 37 | 190 |
| 13 | 190 | 38 | 215 |
| 14 | 185 | 39 | 200 |
| 15 | 185 | 40 | 220 |
| 16 | 245 | 41 | 170 |
| 17 | 215 | 42 | 195 |
| 18 | 200 | 43 | 160 |
| 19 | 195 | 44 | 200 |
| 20 | 205 | 45 | 185 |
| 21 | 180 | 46 | 200 |
| 22 | 175 | 47 | 175 |
| 23 | 175 | 48 | 220 |
| 24 | 185 | 49 | 205 |
| 25 | 220 | 50 | 195 |
| Average | | 199.1 | |

Table LIV: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 8 West Texas Paymaster.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 225 | 26 | 220 |
| 2 | 200 | 27 | 210 |
| 3 | 215 | 28 | 225 |
| 4 | 220 | 29 | 210 |
| 5 | 205 | 30 | 230 |
| 6 | 205 | 31 | 260 |
| 7 | 210 | 32 | 210 |
| 8 | 205 | 33 | 195 |
| 9 | 200 | 34 | 220 |
| 10 | 185 | 35 | 215 |
| 11 | 205 | 36 | 225 |
| 12 | 205 | 37 | 235 |
| 13 | 210 | 38 | 245 |
| 14 | 195 | 39 | 215 |
| 15 | 210 | 40 | 240 |
| 16 | 235 | 41 | 190 |
| 17 | 230 | 42 | 215 |
| 18 | 220 | 43 | 220 |
| 19 | 200 | 44 | 205 |
| 20 | 210 | 45 | 210 |
| 21 | 205 | 46 | 190 |
| 22 | 240 | 47 | 195 |
| 23 | 215 | 48 | 275 |
| 24 | 225 | 49 | 250 |
| 25 | 225 | 50 | 245 |
| Average | | 217.00 | |

Table LV: Single Strand Breaking Strength of 32s Yarn.
 Lot No. 9 Georgia Upland - 1" Mid.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 200 | 26 | 250 |
| 2 | 195 | 27 | 245 |
| 3 | 215 | 28 | 220 |
| 4 | 215 | 29 | 250 |
| 5 | 225 | 30 | 265 |
| 6 | 210 | 31 | 240 |
| 7 | 250 | 32 | 230 |
| 8 | 185 | 33 | 195 |
| 9 | 220 | 34 | 240 |
| 10 | 210 | 35 | 230 |
| 11 | 280 | 36 | 215 |
| 12 | 240 | 37 | 210 |
| 13 | 225 | 38 | 245 |
| 14 | 215 | 39 | 230 |
| 15 | 235 | 40 | 255 |
| 16 | 230 | 41 | 240 |
| 17 | 195 | 42 | 225 |
| 18 | 215 | 43 | 245 |
| 19 | 220 | 44 | 245 |
| 20 | 195 | 45 | 220 |
| 21 | 200 | 46 | 240 |
| 22 | 230 | 47 | 275 |
| 23 | 210 | 48 | 260 |
| 24 | 225 | 49 | 285 |
| 25 | 270 | 50 | 245 |
| Average | | 230.3 | |

Table LVI: Single Strand Breaking Strength of 36s Yarn.
Lot No. 1 Stoneville 2B.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 185 | 26 | 180 |
| 2 | 195 | 27 | 190 |
| 3 | 190 | 28 | 160 |
| 4 | 190 | 29 | 205 |
| 5 | 200 | 30 | 185 |
| 6 | 215 | 31 | 170 |
| 7 | 170 | 32 | 165 |
| 8 | 185 | 33 | 180 |
| 9 | 190 | 34 | 165 |
| 10 | 175 | 35 | 160 |
| 11 | 160 | 36 | 235 |
| 12 | 215 | 37 | 210 |
| 13 | 165 | 38 | 230 |
| 14 | 170 | 39 | 215 |
| 15 | 175 | 40 | 220 |
| 16 | 190 | 41 | 225 |
| 17 | 195 | 42 | 230 |
| 18 | 170 | 43 | 200 |
| 19 | 195 | 44 | 205 |
| 20 | 200 | 45 | 215 |
| 21 | 185 | 46 | 205 |
| 22 | 160 | 47 | 230 |
| 23 | 200 | 48 | 205 |
| 24 | 200 | 49 | 210 |
| 25 | 210 | 50 | 225 |

Average

194.1

Table LVII: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 2 D & P L - 11A.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 185 | 26 | 170 |
| 2 | 155 | 27 | 215 |
| 3 | 170 | 28 | 155 |
| 4 | 170 | 29 | 175 |
| 5 | 155 | 30 | 210 |
| 6 | 160 | 31 | 175 |
| 7 | 170 | 32 | 175 |
| 8 | 140 | 33 | 195 |
| 9 | 160 | 34 | 170 |
| 10 | 155 | 35 | 190 |
| 11 | 170 | 36 | 160 |
| 12 | 190 | 37 | 190 |
| 13 | 165 | 38 | 175 |
| 14 | 185 | 39 | 185 |
| 15 | 170 | 40 | 165 |
| 16 | 145 | 41 | 195 |
| 17 | 165 | 42 | 220 |
| 18 | 195 | 43 | 180 |
| 19 | 160 | 44 | 185 |
| 20 | 155 | 45 | 195 |
| 21 | 175 | 46 | 190 |
| 22 | 180 | 47 | 210 |
| 23 | 210 | 48 | 210 |
| 24 | 150 | 49 | 190 |
| 25 | 160 | 50 | 195 |
| Average | | 177.4 | |

Table LVIII: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 3 Dixie Triumph 8.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 160 | 26 | 170 |
| 2 | 150 | 27 | 150 |
| 3 | 165 | 28 | 175 |
| 4 | 175 | 29 | 185 |
| 5 | 155 | 30 | 160 |
| 6 | 205 | 31 | 145 |
| 7 | 155 | 32 | 140 |
| 8 | 170 | 33 | 140 |
| 9 | 180 | 34 | 155 |
| 10 | 170 | 35 | 170 |
| 11 | 175 | 36 | 210 |
| 12 | 165 | 37 | 175 |
| 13 | 190 | 38 | 195 |
| 14 | 150 | 39 | 200 |
| 15 | 190 | 40 | 175 |
| 16 | 175 | 41 | 190 |
| 17 | 170 | 42 | 170 |
| 18 | 200 | 43 | 205 |
| 19 | 180 | 44 | 185 |
| 20 | 175 | 45 | 170 |
| 21 | 200 | 46 | 225 |
| 22 | 200 | 47 | 190 |
| 23 | 155 | 48 | 215 |
| 24 | 185 | 49 | 205 |
| 25 | 190 | 50 | 190 |
| Average | | 177.5 | |

Table LIX: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 4 Deltapine 12B.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 160 | 26 | 200 |
| 2 | 195 | 27 | 170 |
| 3 | 165 | 28 | 180 |
| 4 | 180 | 29 | 215 |
| 5 | 165 | 30 | 155 |
| 6 | 190 | 31 | 165 |
| 7 | 175 | 32 | 230 |
| 8 | 185 | 33 | 160 |
| 9 | 185 | 34 | 185 |
| 10 | 190 | 35 | 160 |
| 11 | 180 | 36 | 175 |
| 12 | 190 | 37 | 190 |
| 13 | 170 | 38 | 190 |
| 14 | 180 | 39 | 185 |
| 15 | 160 | 40 | 180 |
| 16 | 165 | 41 | 165 |
| 17 | 205 | 42 | 175 |
| 18 | 200 | 43 | 190 |
| 19 | 205 | 44 | 170 |
| 20 | 210 | 45 | 155 |
| 21 | 190 | 46 | 215 |
| 22 | 255 | 47 | 230 |
| 23 | 215 | 48 | 200 |
| 24 | 185 | 49 | 175 |
| 25 | 205 | 50 | 200 |
| Average | | 186.4 | |

Table LX: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 5 Wanamaker - W. R. Cleveland Sta. 4.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 205 | 26 | 230 |
| 2 | 195 | 27 | 230 |
| 3 | 205 | 28 | 215 |
| 4 | 200 | 29 | 220 |
| 5 | 190 | 30 | 205 |
| 6 | 215 | 31 | 165 |
| 7 | 200 | 32 | 150 |
| 8 | 205 | 33 | 165 |
| 9 | 125 | 34 | 160 |
| 10 | 190 | 35 | 175 |
| 11 | 185 | 36 | 175 |
| 12 | 210 | 37 | 175 |
| 13 | 210 | 38 | 180 |
| 14 | 215 | 39 | 165 |
| 15 | 220 | 40 | 170 |
| 16 | 190 | 41 | 195 |
| 17 | 170 | 42 | 160 |
| 18 | 200 | 43 | 180 |
| 19 | 190 | 44 | 170 |
| 20 | 225 | 45 | 175 |
| 21 | 180 | 46 | 195 |
| 22 | 165 | 47 | 185 |
| 23 | 205 | 48 | 190 |
| 24 | 190 | 49 | 160 |
| 25 | 185 | 50 | 190 |
| Average | | 189.0 | |

Table LXI: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 6 Coker's 4 in 1.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 265 | 26 | 175 |
| 2 | 240 | 27 | 165 |
| 3 | 225 | 28 | 170 |
| 4 | 240 | 29 | 185 |
| 5 | 235 | 30 | 175 |
| 6 | 245 | 31 | 170 |
| 7 | 200 | 32 | 215 |
| 8 | 215 | 33 | 190 |
| 9 | 225 | 34 | 165 |
| 10 | 210 | 35 | 210 |
| 11 | 240 | 36 | 180 |
| 12 | 280 | 37 | 170 |
| 13 | 255 | 38 | 205 |
| 14 | 245 | 39 | 170 |
| 15 | 255 | 40 | 250 |
| 16 | 195 | 41 | 215 |
| 17 | 230 | 42 | 245 |
| 18 | 200 | 43 | 240 |
| 19 | 205 | 44 | 235 |
| 20 | 230 | 45 | 240 |
| 21 | 180 | 46 | 225 |
| 22 | 195 | 47 | 175 |
| 23 | 215 | 48 | 200 |
| 24 | 215 | 49 | 205 |
| 25 | 190 | 50 | 200 |
| Average | | 212.1 | |

Table LXII: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 7 Coker's Clewilt #7.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 165 | 26 | 150 |
| 2 | 160 | 27 | 145 |
| 3 | 175 | 28 | 160 |
| 4 | 165 | 29 | 140 |
| 5 | 150 | 30 | 155 |
| 6 | 195 | 31 | 175 |
| 7 | 180 | 32 | 190 |
| 8 | 190 | 33 | 160 |
| 9 | 195 | 34 | 180 |
| 10 | 195 | 35 | 185 |
| 11 | 170 | 36 | 160 |
| 12 | 145 | 37 | 175 |
| 13 | 165 | 38 | 180 |
| 14 | 160 | 39 | 165 |
| 15 | 165 | 40 | 185 |
| 16 | 175 | 41 | 150 |
| 17 | 170 | 42 | 165 |
| 18 | 175 | 43 | 145 |
| 19 | 165 | 44 | 140 |
| 20 | 190 | 45 | 165 |
| 21 | 210 | 46 | 140 |
| 22 | 195 | 47 | 185 |
| 23 | 190 | 48 | 200 |
| 24 | 200 | 49 | 155 |
| 25 | 185 | 50 | 180 |
| Average | | 171.2 | |

Table LXIII: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 8 West Texas Paymaster.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 180 | 26 | 215 |
| 2 | 190 | 27 | 200 |
| 3 | 170 | 28 | 160 |
| 4 | 185 | 29 | 180 |
| 5 | 165 | 30 | 185 |
| 6 | 180 | 31 | 175 |
| 7 | 210 | 32 | 180 |
| 8 | 215 | 33 | 200 |
| 9 | 200 | 34 | 200 |
| 10 | 245 | 35 | 210 |
| 11 | 155 | 36 | 205 |
| 12 | 180 | 37 | 215 |
| 13 | 205 | 38 | 195 |
| 14 | 210 | 39 | 190 |
| 15 | 200 | 40 | 205 |
| 16 | 205 | 41 | 200 |
| 17 | 190 | 42 | 210 |
| 18 | 210 | 43 | 245 |
| 19 | 230 | 44 | 175 |
| 20 | 180 | 45 | 190 |
| 21 | 195 | 46 | 180 |
| 22 | 225 | 47 | 245 |
| 23 | 210 | 48 | 195 |
| 24 | 195 | 49 | 190 |
| 25 | 220 | 50 | 205 |
| Average | | 198.0 | |

Table LXIV: Single Strand Breaking Strength of 36s Yarn.
 Lot No. 9 Georgia Upland - 1" Mid.

| Specimen Number | Single Strand Breaking Strength (grams) | Specimen Number | Single Strand Breaking Strength (grams) |
|--------------------|---|--------------------|---|
| 1 | 190 | 26 | 160 |
| 2 | 165 | 27 | 190 |
| 3 | 175 | 28 | 180 |
| 4 | 230 | 29 | 175 |
| 5 | 210 | 30 | 170 |
| 6 | 225 | 31 | 160 |
| 7 | 200 | 32 | 185 |
| 8 | 240 | 33 | 190 |
| 9 | 220 | 34 | 205 |
| 10 | 225 | 35 | 205 |
| 11 | 190 | 36 | 210 |
| 12 | 205 | 37 | 200 |
| 13 | 225 | 38 | 185 |
| 14 | 235 | 39 | 190 |
| 15 | 200 | 40 | 165 |
| 16 | 185 | 41 | 175 |
| 17 | 160 | 42 | 195 |
| 18 | 165 | 43 | 180 |
| 19 | 165 | 44 | 175 |
| 20 | 185 | 45 | 200 |
| 21 | 170 | 46 | 170 |
| 22 | 155 | 47 | 175 |
| 23 | 165 | 48 | 150 |
| 24 | 180 | 49 | 165 |
| 25 | 175 | 50 | 180 |
| Average | | 187.8 | |

Table LXV: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 1 Stoneville 2B.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 21.84 | 95.98 | 2096.20 | 45,781.00 | 476.99 |
| 31.80 | 58.06 | 1846.31 | 58,712.66 | 1011.24 |
| 35.46 | 43.76 | 1551.73 | 55,024.34 | 1257.41 |
| 89.10 | 197.80 | 5494.24 | 159,518.00 | 2745.64 |

EQUATIONS:

$$\begin{aligned}
 Y &= MX + b \\
 \sum Y &= M \sum X + Nb \\
 \sum XY &= M \sum X^2 + b \sum X
 \end{aligned}$$

CALCULATIONS:

$$\begin{aligned}
 89.10M + 3b &= 5,494.24 \\
 2745.64M + 89.10b &= 159,518.00 \\
 \underline{-2646.27M + 89.10b} &= \underline{-163,178.93} \\
 99.37M &= -3,660.93
 \end{aligned}$$

$$M = -36.82$$

$$\begin{aligned}
 3b &= 5494.24 - 89.10M \\
 3b &= 5494.24 - 89.10(-36.82)
 \end{aligned}$$

$$b = 2924.97$$

$$\begin{aligned}
 Y &= MX + b \\
 Y &= -36.82(20) + 2924.97
 \end{aligned}$$

$$Y = 2188.57$$

$$\begin{aligned}
 \text{Strength} &= \frac{Y}{\text{Count}} \\
 &= \frac{2188.57}{20}
 \end{aligned}$$

$$\text{Strength} = 109.430 \text{ lbs.}$$

Table LXVI: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 2 D & P L - 11A.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 22.39 | 83.09 | 1860.38 | 41,653.90 | 501.31 |
| 32.91 | 48.80 | 1600.00 | 62,767.00 | 1083.81 |
| 35.90 | 38.68 | 1388.61 | 49,851.10 | 1288.81 |
| 91.20 | 170.57 | 4848.99 | 144,161.00 | 2873.19 |

EQUATIONS:

$$\begin{aligned}
 Y &= MX + b \\
 \sum Y &= M \sum X + Nb \\
 \sum XY &= M \sum X^2 + b \sum X
 \end{aligned}$$

CALCULATIONS:

$$\begin{aligned}
 91.20M + 3b &= 4848.99 \\
 2873.19M + 91.20b &= 144,161.00 \\
 \underline{-2762.48M + 91.20b} &= \underline{-147,399.30} \\
 110.71M &= -3,238.30
 \end{aligned}$$

$$M = -29.25$$

$$\begin{aligned}
 3b &= 4848.99 - 91.20M \\
 3b &= 4848.99 - 91.20(-29.25)
 \end{aligned}$$

$$b = 2505.53$$

$$\begin{aligned}
 Y &= MX + b \\
 Y &= -29.25(20) + 2505.53
 \end{aligned}$$

$$Y = 1920.53$$

$$\begin{aligned}
 \text{Strength} &= \frac{Y}{\text{Count}} \\
 &= \frac{1920.53}{20}
 \end{aligned}$$

$$\text{Strength} = 96.026 \text{ lbs.}$$

Table LXVII: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 3 Dixie Triumph 8.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 23.02 | 84.68 | 1949.33 | 44,873.58 | 529.92 |
| 33.88 | 48.37 | 1672.66 | 56,669.72 | 1147.85 |
| 38.33 | 38.62 | 1480.30 | 56,739.90 | 1469.19 |
| 95.23 | 172.67 | 5102.29 | 158,283.20 | 3146.96 |

EQUATIONS:

$$Y = MX + b$$

$$\sum Y = M \sum X + Nb$$

$$\sum XY = M \sum X^2 + b \sum X$$

CALCULATIONS:

$$95.23M + 3b = 5,102.29$$

$$3146.96M + 95.23b = 158,283.20$$

$$\underline{-3022.89M + 95.23b = 161,961.99}$$

$$124.07M = -3,678.79$$

$$M = -29.65$$

$$3b = 5201.29 - 95.23M$$

$$3b = 5201.29 - 95.23(-29.65)$$

$$b = 2674.95$$

$$Y = MX + b$$

$$Y = -29.65(20) + 2674.95$$

$$Y = 2081.95$$

$$\text{Strength} = \frac{Y}{\text{Count}}$$

$$= \frac{2081.95}{20}$$

$$\text{Strength} = 104.200 \text{ lbs.}$$

Table LXVIII: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 4 Deltapine 12B.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 21.90 | 88.34 | 1934.65 | 42,368.84 | 479.61 |
| 34.16 | 49.10 | 1677.25 | 57,294.86 | 1166.91 |
| 36.41 | 41.39 | 1507.01 | 54,870.23 | 1325.69 |
| 92.47 | 178.83 | 5118.91 | 154,533.93 | 2972.21 |

EQUATIONS:

$$Y = MX + b$$

$$\sum Y = M \sum X + Nb$$

$$\sum XY = M \sum X^2 + b \sum X$$

CALCULATIONS:

$$92.47M + 3b = 5,118.91$$

$$2972.21M + 92.47b = 154,533.93$$

$$2850.20M + 92.47b = 157,780.16$$

$$122.01M = -3,246.23$$

$$M = -26.52$$

$$3b = 5118.91 - 92.47M$$

$$3b = 5118.91 - 92.47(-26.52)$$

$$b = 2523.74$$

$$Y = MX + b$$

$$Y = -26.52(20) + 2523.74$$

$$Y = 1993.74$$

$$\text{Strength} = \frac{Y}{\text{Count}}$$

$$= \frac{1993.74}{20}$$

$$\text{Strength} = 99.690 \text{ lbs.}$$

Table LXIX: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 5 Wanamaker-W. R. Cleveland Sta. 4.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 21.87 | 94.97 | 2076.99 | 45,423.77 | 478.30 |
| 34.01 | 50.63 | 1721.93 | 58,562.84 | 1156.68 |
| 37.42 | 43.24 | 1618.04 | 60,547.04 | 1400.26 |
| 93.30 | 188.84 | 5416.96 | 165,533.67 | 3035.24 |

EQUATIONS:

$$\begin{aligned} Y &= MX + b \\ \sum Y &= M \sum X + Nb \\ \sum XY &= M \sum X^2 + b \sum X \end{aligned}$$

CALCULATIONS:

$$\begin{aligned} 93.30M + 3b &= 5,416.96 \\ 3035.24M + 93.30b &= 165,533.67 \\ \underline{2901.63M + 93.30b} &= \underline{168,467.46} \\ 123.61M &= -3,933.79 \end{aligned}$$

$$M = -31.82$$

$$\begin{aligned} 3b &= 5416.96 - 93.30M \\ 3b &= 5416.96 - 93.30(-31.82) \end{aligned}$$

$$b = 2761.92$$

$$\begin{aligned} Y &= MX + B \\ Y &= -31.82(20) + 2761.92 \end{aligned}$$

$$Y = 2125.52$$

$$\begin{aligned} \text{Strength} &= \frac{Y}{\text{Count}} \\ &= \frac{2125.52}{20} \end{aligned}$$

$$\text{Strength} = 106.270 \text{ lbs.}$$

Table LXX: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 6 Coker's 4 in 1.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 21.59 | 94.66 | 2045.71 | 44,123.70 | 466.13 |
| 31.81 | 55.16 | 1754.64 | 55,815.10 | 1011.88 |
| 34.41 | 45.09 | 1551.55 | 53,388.83 | 1184.05 |
| 87.81 | 194.91 | 5349.90 | 153,327.63 | 2662.06 |

EQUATIONS:

$$Y = MX + b$$

$$\sum Y = M \sum X + Nb$$

$$\sum XY = M \sum X^2 + b \sum X$$

CALCULATIONS:

$$\begin{array}{rcl} 87.81M + 3b & = & 5,349.90 \\ 2662.06M + 87.81b & = & 153,327.63 \\ \hline 2570.20M + 87.81b & = & 156,591.57 \\ \hline 91.86M & = & -3,263.94 \end{array}$$

$$M = -35.53$$

$$3b = 5349.90 - 87.81M$$

$$3b = 5349.90 - 87.81(-35.53)$$

$$b = 2823.26$$

$$Y = MX + b$$

$$Y = -35.53(20) + 2823.26$$

$$Y = 2112.66$$

$$\text{Strength} = \frac{Y}{\text{Count}}$$

$$= \frac{2112.66}{20}$$

$$\text{Strength} = 105.630 \text{ lbs.}$$

Table LXXI: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 7 Coker's Cleveland #7.

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 22.19 | 87.83 | 1948.95 | 43,247.20 | 492.40 |
| 32.81 | 51.02 | 1673.97 | 54,922.96 | 1076.50 |
| 37.47 | 41.73 | 1563.62 | 58,588.82 | 1404.00 |
| 92.47 | 180.58 | 5186.54 | 156,758.98 | 2972.90 |

EQUATIONS:

$$Y = MX + b$$

$$\sum Y = M \sum X + Nb$$

$$\sum XY = M \sum X^2 + b \sum X$$

CALCULATIONS:

$$92.47M + 3b = 5,186.54$$

$$2972.90M + 92.47b = 156,758.98$$

$$\underline{-2850.22M + -92.47b = -159,864.72}$$

$$122.68M = -3,105.74$$

$$M = -25.32$$

$$3b = 5186.54 - 92.47M$$

$$3b = 5186.54 - 92.47(-25.32)$$

$$b = 2509.21$$

$$Y = MX + b$$

$$Y = -25.32(20) + 2509.21$$

$$Y = 2002.81$$

$$\text{Strength} = \frac{Y}{\text{Count}}$$

$$= \frac{2002.81}{20}$$

$$\text{Strength} = 100.140 \text{ lbs.}$$

Table LXXII: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 8 West Texas Paymaster

DATA:

| Count X | Strength | Count-Strength Product Y | XY | X ² |
|------------|----------|-----------------------------|------------|----------------|
| 20.93 | 93.53 | 1957.58 | 49,972.15 | 438.06 |
| 30.24 | 56.32 | 1703.12 | 51,502.35 | 914.46 |
| 34.38 | 44.49 | 1529.57 | 52,586.62 | 1181.98 |
| 85.55 | 194.34 | 5190.27 | 145,061.12 | 2534.50 |

EQUATIONS:

$$\begin{aligned}
 Y &= MX + b \\
 \sum Y &= M \sum X + Nb \\
 \sum XY &= M \sum X^2 + b \sum X
 \end{aligned}$$

CALCULATIONS:

$$\begin{aligned}
 85.55M + 3b &= 5,190.27 \\
 2534.50M + 85.55b &= 145,061.12 \\
 \underline{-2439.63M + 85.55b} &= \underline{-148,010.93} \\
 94.87M &= -2,949.81
 \end{aligned}$$

$$M = -31.09$$

$$\begin{aligned}
 3b &= 5190.27 - 85.55M \\
 3b &= 5190.27 - 85.55(-31.09)
 \end{aligned}$$

$$b = 2616.67$$

$$\begin{aligned}
 Y &= MX + b \\
 Y &= -31.09(20) + 2616.67
 \end{aligned}$$

$$Y = 1994.87$$

$$\begin{aligned}
 \text{Strength} &= \frac{Y}{\text{Count}} \\
 &= \frac{1994.87}{20}
 \end{aligned}$$

$$\text{Strength} = 99.740 \text{ lbs.}$$

Table LXXIII: Weighted Average by Fitting a Straight Line,
Using the Method of Least Squares, to the
Count-Strength Products.
Lot No. 9 Georgia Upland - 1" Mid.

DATA:

| Count X | Strength Y | Count-Strength Product XY | X ² |
|------------|---------------|------------------------------|----------------|
| 21.78 | 95.99 | 2090.66 | 474.37 |
| 30.68 | 55.07 | 1689.55 | 941.25 |
| 35.98 | 44.48 | 1600.39 | 1294.56 |
| 88.44 | 195.54 | 5380.60 | 2710.19 |

EQUATIONS:

$$\begin{aligned}
 Y &= MX + b \\
 \sum Y &= M \sum X + Nb \\
 \sum XY &= M \sum X^2 + b \sum X
 \end{aligned}$$

CALCULATIONS:

$$\begin{aligned}
 88.44M + 3b &= 5,380.60 \\
 2710.19M + 88.44b &= 154,951.99 \\
 \underline{-2607.21M + 88.44b} &= \underline{-158,620.09} \\
 102.98M &= -3,668.10
 \end{aligned}$$

$$M = -35.62$$

$$\begin{aligned}
 3b &= 5380.60 - 88.44M \\
 3b &= 5380.60 - 88.44(-35.62)
 \end{aligned}$$

$$b = 2843.61$$

$$\begin{aligned}
 Y &= MX + b \\
 Y &= -35.62(20) + 2843.61
 \end{aligned}$$

$$Y = 2131.21$$

$$\begin{aligned}
 \text{Strength} &= \frac{Y}{\text{Count}} \\
 &= \frac{2131.21}{20}
 \end{aligned}$$

$$\text{Strength} = 106.610 \text{ lbs.}$$